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CONTENTS.

ARTICLE		PAGE
I.	Theory of the Beautiful	3
II.	The Six Days of Creation	21
III.	La Borde's Introduction to Physiology	51
IV.	Slavery and Freedom	62
V.	The Nebular Hypothesis	95
VI.	Works of William Paley	118
VII.	Physical Geography of the Sea	151
VIII.	Barnard on American Colleges	168
IX.	Memoir of Dr. Henry	189
	Critical Notices	207

General

THE

SOUTHERN QUARTERLY REVIEW.

NEW SERIES. APRIL, 1856. VOL. I...No. 1.

ART. I.—THEORY OF THE BEAUTIFUL.

Essays on the Nature and Principles of Taste. By ARCHIBALD ALISON, LL.D., B.F.R.S., &c. 2 vols. Edinburgh, 1811.

IN the Edinburgh Review for May, 1811, Lord Jeffrey said of the work at the head of this article, "We look upon this as, on the whole, the best and most pleasing work which has yet been produced on the subjects of taste and beauty. Less ornate and adventurous than Price or Knight, the author, we think, has gone deeper into his subject than any of those writers; at the same time that he has been more copious (perhaps too copious) in his examples and illustrations, and more constantly awake (perhaps to an excess here also) to those feelings of enthusiastic delight which the contemplation of such subjects is apt to excite in the minds best qualified to discuss them." It is because the work of Alison still, in our opinion, holds the place assigned to it by the Edinburgh critic, that we now make it the starting point in an inquiry into the theory of the beautiful in the material world, which we propose in this article.

The theory of the beautiful often resolves itself, in the course of discussion, into the theory of taste; they being only different views of the same question. We shall, therefore, begin the inquiry by an investigation into the theory of taste, as the polemical aspects of the question make this the most convenient mode of examining it.

So difficult has it always been to fix upon any certain standard of taste, that there is a long-established proverb denying there is any standard. All tastes are supposed by it to be equally justified in reason; or, rather, the proverb supposes, that taste is a matter with which reason has nothing to do. "There is no disputing about tastes," is the great canon of popular opinion by which the most disputatious is silenced.

But philosophy does not yield to popular opinion, neither is it content to acquiesce in what has a mere semblance of truth. It

M. F. M.

strives after certainty amidst uncertainty. Therefore, it has ever striven to solve the problem of the theory of taste. And solution after solution has been put forth, from age to age, without any definite settlement of the question up to this time. There must, therefore, be great difficulty in the subject; and perhaps, after all, philosophy may be compelled to confess its ignorance, and to acquiesce in the popular notion, that there is no standard of taste or theory of the beautiful.

Upon a subject so curious, we felt a desire to see what such an arch-sophist as Voltaire, who sacrificed everything to the spirit of levity and wit, would say about it. We therefore turned to his Philosophical Dictionary, and found the following: "Since we have quoted Plato on love, why should we not quote him on the beautiful, since beauty causes love. It is curious to know how a Greek speaks of the beautiful more than two thousand years since.

"The man initiated into the sacred mysteries, when he sees a beautiful face, accompanied by a divine form, as something more than mortal, feels a secret emotion, and I know not what respectful fear. He regards this figure as a divinity. When the influence of beauty enters into his soul by his eyes, he burns; the wings of his soul are bedewed; they lose the hardness which retains their germs, and liquify themselves; these germs swelling beneath the roots of its wings, they expand from every part of the soul (for the soul had wings formerly)," &c.

"I am willing to believe," says Voltaire, further, "that nothing can be finer than this discourse of the divine Plato; but it does not give us very clear ideas of the nature of the beautiful. Ask a toad what is beauty, the great beauty, the το καλον; he will answer that it is his female, with two great round eyes coming out of her little head, her large flat mouth, her yellow belly, and broad back. Ask a negro of Guinea: beauty is to him a black oily skin, sunken eyes, and a flat nose. Ask the devil: he will tell you that the beautiful consists in a pair of horns, four claws, and a tail. Then consult the philosophers: they will answer with jargon; they must have something conformable to the archetype of the essence of the beautiful—to the το καλον."

Though this attempt to ridicule the possibility of any certain theory of the beautiful was made by Voltaire in a spirit of universal scoffing, and but shows the subtle art with which he could weave a thread of contradictions through a subject, still it sets forth, in a striking way, a sentiment which most men feel whenever they endeavour to unravel the perplexities of the theory. They find in their minds so many apparent contradictions, that they are unable to form any definite opinion about it. Lord Jeffrey, in his article on Alison, has presented the same contradictions; but for the purpose of solving them, and not, like Voltaire, to turn on his heel and sneer at the pretended beauty of things. "All men,"

says Jeffrey, "allow grass to be green, and sugar sweet, and ice to be cold; and the unavoidable inference from any apparent disagreement in such matters necessarily is, that the party is insane, or entirely destitute of the sense or organ concerned in the perception. With regard to beauty, however, it is obvious, at first sight, that the case is entirely different. One man sees it perfectly, where to another it is quite invisible, or even where its reverse seems to be conspicuous. Nor is this owing to the insensibility of either of the parties; for the same contrariety exists where both are keenly alive to the influences of the beauty they respectively discern. A Chinese or African lover would probably see nothing at all attractive in a belle of London or Paris; and undoubtedly an *elegans formarum spectator* from either of those cities would discover nothing but deformity in the Venus of the Hottentots. A little distance in time often produces the same effects as distance of place: the gardens, the furniture, the dress which appeared beautiful in the eyes of our grandfathers, are odious and ridiculous in ours. Nay, the difference of rank, education, or employments gives rise to the same diversity of sensation. The little shopkeeper sees a beauty in his roadside box, and in the staring tile roof, wooden lions, and clipped boxwood, which strike horror into the soul of the student of the picturesque; while *he* is transported in surveying the fragments of ancient sculpture which are nothing but ugly masses of mouldering stone in the judgment of the admirer of neatness. It is needless, however, to multiply instances, since the fact admits of no contradiction."

It is not, therefore, merely to the mind of the sophist, like Voltaire, that these considerations present themselves, but they stand as difficulties at the threshold of the inquiry into the theory of the beautiful. The philosopher as well as the common man sees them; and they must be reconciled and brought into harmony with some principle, before the foundation for a theory of the beautiful can be laid. The common man turns away from these contradictions, and still believes in the reality of the beautiful, because he feels its influence pouring its pleasurable melodies through his whole nature. But the philosopher, giving himself up entirely to the dominion of reason, must reconcile the contradictions, or else deny the reality of beauty as an intrinsic thing. The contradictions and a belief in beauty cannot exist together in his creed. Either the one or the other must, in his opinion, be a shadow, an illusion, unless he can reconcile them. How, then, are we to reconcile these contradictions, and show that there is a principle by which men's minds are governed in their judgments about beauty?

Alison in his Essay, and Jeffrey in his Review, maintain that the beauty of objects depends solely upon association; and that, by this principle, both the proximate uniformity and the great diversity of tastes can be accounted for. They maintain that the

inherent qualities of an object have no part in constituting its beauty, but that its beauty is constituted solely of the associations with which the object is connected in every individual's experience; and that the reason why the same objects are beautiful to so many different persons is owing solely to the fact, that they are associated with the same pleasures and delights in the experience of so many. The same objects, for example, are associated with the same pleasures in the childhood and youth of almost all men; and such is very much the case also in after life. But that, whenever the experiences are different, the opinions of the beauty of objects will be different too. And thus the principle of association accounts for both the proximate uniformity and the diversity of tastes. Jeffrey thus sums up the theory: "In our opinion, then, our sense of beauty depends entirely on our previous experience of simpler pleasures or emotions, and consists in the *suggestion* of agreeable or interesting sensations with which we had formerly been made familiar by the direct and intelligible agency of our common sensibilities; and that vast variety of objects to which we give the common name of beautiful become entitled to that apellation merely because they all possess the power of recalling or reflecting those sensations of which they have been the accompaniments, or with which they have been associated in our imaginations by any other more casual bond of association. According to this view of the matter, therefore, beauty is not an inherent property or quality of objects at all, but the result of the accidental relations in which they may stand to our experience of pleasures or emotions; and does not depend upon any particular configuration of parts, proportions, or colors in external things, nor upon the unity, coherence, or simplicity of intellectual creations; but merely upon the associations which, in the case of every individual, may enable these inherent and otherwise indifferent qualities to suggest or recall to the mind emotions of a pleasurable or interesting description. It follows, therefore, that no object is beautiful in itself, or could appear so, antecedent to an experience of direct pleasures or emotions; and that, as an infinite variety of objects may thus reflect interesting ideas, so all of them may acquire the title of beautiful, although utterly diverse and disparate in their nature, and possessing nothing in common but the accidental power of reminding us of other emotions."

According to this theory, which is presented in Jeffrey's own words, the beauty of objects consists of pleasant memories which cluster around them. Pleasures which had been previously excited in our minds by other causes in association with these objects are recalled by them, and the mind transfers to them the qualities of the original causes, because they reawaken the same pleasures. Now, it is quite manifest, from the mere statement of this theory, that it does not remove all the difficulties from the subject. It

does not account for the "simpler pleasures or emotions," which are suggested by their having been associated with the objects called beautiful. Something extrinsic of the mind must have caused these; for it will hardly be contended that these "simpler pleasures or emotions" arise spontaneously in the soul. And the theory admits that they are "sensations with which we had formerly been made familiar." What, then, first awakened them within us? Jeffrey answers, "the direct and intelligible agency of our common sensibilities." This answer is a mere collocation of words that only discloses the confusion of the writer. It has no intelligible meaning. Driven by his own development of his theory into the substitution of words for things, he thereby deceives himself by the worst of sophistries. The truth is, the principle of association does not solve the problem of the æsthetic effect of objects upon our minds. It accounts for some of the effects, and is true as a principle, but not as a theory. It does not exhaust the problem. Something further needs to be explained. And, besides, the principle of association is, for the most part, though not exclusively, applicable to objects of art, to dress, furniture, and such things as are connected with the fashions which are constantly changing with the changeful passions of man. Of this class of objects, mere accidental associations constitute much of that agreeable effect which we call their beauty. But it is much less the case with objects of nature. They owe much less of their effect to accidental associations.

We would say that the æsthetic effect of an object is founded in three principles, the principle of *impression*, the principle of *resemblance*, and the principle of *association*.

The principle of *impression* consists of the native intrinsic power which an object possesses over our emotional nature. The principle of *resemblance* consists of the analogy which is felt between the effect which one object produces upon us and that of another. The principle of *association* consists of the effect of those circumstances which are connected conventionally or by accident with the objects.

These three principles, it seems to us, will account for the entire æsthetic effect of objects upon the mind, as we will endeavor to show by example and analysis. We will treat of the principles in the order in which we have enounced them.

No one will pretend that the whole æsthetic effect of an object lies in its intrinsic qualities. But that a part of it does, and that no inconsiderable part, we will now show.

Every flower, and the clear streams, and the green meadows, and lofty, wide-spreading trees, and vast cataracts, and high mountains, and sloping hills, and the rising and the setting sun, each and all have an intrinsic power of exciting certain sentiments in our minds; and the kind of sentiment is peculiar to each object.

The objects may be said, in a certain sense, to express these emotions. And they do not express these emotions from association, but because, by their very constitution, they are so related to the mind of man as to affect it in pre-ordained modes. The objects, it is true, do not express articulate words conveying definite thoughts; but the emotions can be excited from without, though no definite idea or thought be conveyed to the mind. It can be done by music. Any emotion, whether heroic or tender, pathetic or comic, can be awakened simply by a tune of corresponding nature, which the hearer never before heard, and to which no words have been ever affixed. Music speaks to the ear, not in articulate words, but in inarticulate sounds. It conveys, not thought, but feeling. But the mind is so constituted, that when the emotional element is thus affected, the intellect is at once roused into a train of thought corresponding to the nature of the emotions awakened. The whole machinery of thought may thus be set at work.

In a like manner, the various inanimate objects in nature possess the power of awakening the emotions of man. They possess a sort of melody and harmony in their forms and colors, which is perceived through the eye, that produces in our minds effects akin to those of music. This melody and harmony awakens the imaginative sympathy of the poet and the painter, and inspires his creative faculties. The deep bass of sublime objects, and the sweet tenor of the beautiful, strike mute notes in the human heart as potent as those of any music. This silent melody and harmony is the root of all the æsthetic effects of nature. Milton, when blind, felt it in his imaginary wanderings amidst the scenery of nature:

> "Yet not the more
> Cease I to wander where the Muses haunt,
> Clear spring, or shady grove, or sunny hill,
> Smit with the love of sacred song; but chief
> Thee, Sion, and the flowery brooks beneath
> That wash thy hallow'd feet, and, washing, flow,
> Nightly I visit; * * * *
> Then feed on thoughts that voluntary move
> Harmonious numbers."

The intrinsic æsthetic qualities of things can be still more clearly indicated by examples in the animal kingdom. The eagle and the linnet, the vulture and the turtle, the lion and the lamb, express, by their forms, their respective natures; and man, with his heaven-erected face, shows in his form the glory of his soul; and this, independent of all associations borrowed from previous experience. This glory will shine forth in despite of all associations. We see it in Milton's fallen archangel; and in the scenes of earth's direst calamities, we see this glory and feel its power. When it was heard amongst the multitudes of Paris that their idol, Marat, had been stabbed to the heart by Charlotte Corday, every-

thing infamous was immediately associated with that young woman; the multitudes conceived her as a hideous fury, and were ready to tear her in pieces. When, on the way to her execution, she appeared dressed in the red chemise of the assassin, they sent forth hootings and execrations at the sight of the infamous garb so full of vile associations. But as the exquisite loveliness of her pure and serene countenance, and the sculptured beauty of her figure, became more and more fully revealed to their eyes, as she rode along the street to the place of execution, all associations of crime and infamy gradually faded away; and the multitudes, calmed and subdued, and melted by so much loveliness, took off their hats in homage to the transcendent power of intrinsic beauty. The infamous associations faded away like mists from the beauty of nature. The intrinsic expression of the face and the form awakened that homage of the heart which the Creator has made the natural effect of beauty.

Having thus illustrated the principle of *impression*, we will next consider the principle of *resemblance*.

The principle of *resemblance* consists in the analogy which is felt between the effect which one object produces upon us, and that of another. The other object is by this felt analogy recalled to our minds, and its own proper effect is at the same time realized in conjunction with that of the one recalling it. It is by this principle that all metaphors, similes, and personifications are formed. The imaginative personifying sympathy likens inanimate things to a person, on account of the felt analogy in their effects on the soul. Akenside has personified the beauty of the material world as a woman, because of the similar emotions which they awaken:

> "Thus was Beauty sent from heaven,
> The lovely ministress of truth and good
> In this fair world."

The principle of resemblance may be called the principle of *analogical association;* because, by the felt analogy between their attributes, the inanimate object is associated in imagination with the person it personifies. This will be illustrated in the course of our inquiry.

We come now to the principle of *association*. Alison and Jeffrey do not distinguish this principle from the principle of *resemblance* which we have just considered. Many of the instances which they give in illustration of the principle of *association* come under the principle of resemblance. Whenever one thing is associated with another, whether by a felt analogy or by mere accident, it is indiscriminately referred, by these writers, to the principle of *association*. This leads inevitably to great obscurity and confusion in the theory of taste. The associations which result from analogy exist in the natures of the objects themselves.

They are the result of similar features stamped by the hand of the Creator upon the different objects of nature. But associations which are not founded in any analogy between the objects themselves, but merely upon their having been arbitrarily associated in our experience—as the place of our birth with the pleasures of childhood—are not inherent in the objects. They exist in our minds merely as memories. They shed an influence over *our* hearts, but have no power over the hearts of those who have not had the same experience. To confound analogical associations with these mere arbitrary associations, and to conceive them all as arbitrary, as Alison and Jeffrey do, is to fall into a fatal blunder. It is, however, true that both these writers do show some faint perception of the distinction which we are illustrating; but then they have but a momentary glimpse, which is soon lost under the notion that all association is arbitrary. The whole tenor of the remarks and reasonings of both writers shows clearly, that arbitrary association was the cardinal notion which was guiding their inquiries through the perplexities of the theory of taste. The grand difficulty which throws perplexity over the whole subject, and makes it especially dark at the beginning, is the apparent contradictions which we have already noticed. Now, these contradictions are reconciled by the principle of arbitrary association; as we have seen in what has been said on the subject. Having discovered this, Alison could see no other fundamental principle, but thought that the whole theory of taste ultimately reposed upon it alone. The class of analogical associations, though continually employed by him in illustrating the power of association over the mind, is not distinguished by him from arbitrary association; but all are confounded together. Jeffrey fell into the same error; and thus the true nature of association, in the theory of the beautiful, is in reality overlooked by both these writers. They were, therefore, unable to make a classification which the distinction that we are exhibiting will enable us to make, and thereby to carry analysis much further into the theory of taste than they did. This will appear in the sequel.

We have now considered the three principles upon which we have said the theory of taste ultimately rests. It is clear that no one of them will account for all the phenomena of taste. The principle of *impression*, as we have chosen to call it, will not do so; because we all admit the force of association. The principle of *resemblance* assumes that it cannot do it. And we have shown that the principle of association is wholly inadequate. But when all are combined, we know nothing within the ultimate facts of taste that is not explained by them.

We will now make a distinction, and a consequent classification, which Alison and Jeffrey could not discover, on account of the error in their analysis which we have pointed out; and this will take us a step beyond them in the theory of taste.

It will be noted that, as yet, we have made no distinction between the sublime and the beautiful. It has not been necessary in the investigation which we have thus far been pursuing. What has been said in regard to the three principles pointed out by us is equally applicable to both the sublime and the beautiful; and when it has been necessary to speak of an instance of the sublime, we have used that epithet. But in the general current of remark, the word beautiful has been used in a general sense, including the sublime. This is the most scientific, and, at the same time, practical mode of treating the subject.

That, however, must be a poor scheme of philosophy which does not discover some principle upon which so obvious a distinction as that between the beautiful and the sublime rests. The distinction is too clearly manifested in language for philosophy to ignore it. Yet neither Alison nor Jeffrey notes such a distinction; and no philosophical inquirer, as far as we know, has made any successful distinction. The rhetoricians have illustrated, by instances, sublimity and beauty; but no distinctive principle, showing an essential difference between the two, has, as yet, been propounded by any philosopher. Burke, in his Essay on the Sublime and the Beautiful, has beat in the dark after a distinction between the two, but has not gone beyond the rhetoricians in his analysis. What he has said about the distinctive features of the sublime and of the distinctive features of the beautiful is, for the most part, true; but he sees only confusedly. Though he enters into much minute analysis, he deals with the whole subject more after the manner of a rhetorician than a philosopher. And Cousin, in his Lectures on the Philosophy of the Beautiful, says that the beautiful is one in essence, and that the difference between the sublime and the beautiful is one merely of form; and even this is said in a very brief and confused way, as though he had no clear view of the subject. It should, however, be remarked, that his discussion has no experiential doctrine in it, but is purely transcendental. He deals with absolute ideas, and makes no attempt to explain concrete beauty as exemplified in nature. He merely remarks that physical beauty is but the halo of ideal beauty. His discussion is but a reverie, an episode of contemplative musing about the ideal, upon a subject the whole interest of which consists in the explanation of the real. It is the beauty of the actual world that needs to be explained; and Cousin should have made his ideal speculations subservient to that end. But he soars away from earth, and hardly ever looks toward it in his flight. He has, therefore, contributed nothing towards a true theory of the beautiful. But even so practical a writer as Winckelman makes no distinction between the sublime and the beautiful. Though his History of Ancient Art consists, for the most part, of practical and theoretical criticisms, still, in the chapter on the Essential of Art,

in that portion of the history which treats of art amongst the Greeks, the distinction between the sublime and the beautiful was a proper subject for inquiry. But he treats the essential of art under the general term, beautiful. Alison and Jeffrey seemed to think that the principle of association was the ultimate æsthetic principle to which our faculties can attain; and that no distinction was needed beyond it. Consequently they made no endeavour to find any principle by which the sublime could be distinguished from the beautiful. In fact, they thought that, in ultimate analysis, there was no difference between them so far as the theory of taste was concerned. Jeffrey has expressly said: "Sublimity and beauty, in any just or large sense, and with a view to the philosophy of either, are manifestly one and the same." Now, if Jeffrey meant that the law of association, which he was discussing, was equally applicable to sublimity and to beauty; and did not mean that the sublime and the beautiful are one and the same in their essential principle, we have no fault to find with his doctrine; but if he meant the latter, then nothing can be more erroneous. For in all the languages of the world, in all ages, those objects in nature which impress us agreeably have been divided into the sublime and the beautiful. That must be a radical difference in effects which language thus so universally denotes. And all poetry testifies to the difference between the sublime and the beautiful in nature. The heroic passions are always associated with sublime objects, and the tender affections with the beautiful; battles and the deliberations of senates are laid amidst sublime objects, and love and domestic bliss amidst the beautiful. How different is the general scenery of the book of Job from that of the Song of Solomon! This results from the difference in the sentiments portrayed. The same difference prevails throughout the whole range of poetry, and in the different writings of the same poet. Every man who has really studied nature, who has spent months at a time, as we have, amidst its different aspects, merely to note their different æsthetic effects upon himself, and to trace, with an accurate consciousness, the different sentiments awakened within him, knows, to his inmost heart, the essential difference between the sublime and the beautiful, and with what different sentiments they are respectively associated.

Having shown that there are three great æsthetical principles, and also that there is an essential difference between the sublime and the beautiful, we will now proceed to point out the distinctive characteristic of the sublime and the distinctive characteristic of the beautiful.

The world was created more especially for *man*. It was not until after *he* had been "put into the garden of Eden, to dress it and to keep it," that woman was formed; and it was afterwards declared that he should rule over her. In looking at the scheme

of this world, therefore, it is to *man* that we must chiefly direct our attention. This is the mode in which the history of the human race is written in the sacred Scriptures; and it is the mode in which we shall deal with the theory of the beautiful in the material world. *Man* must be the centre of the inquiry, as it is in relation to him that the theory is propounded; he is seen dwelling in the midst of the physical universe; and the problem of the theory of taste is, what is the rationale of the effects of natural objects upon his emotional nature?

When God created man, and placed him in the garden of Eden, he made "to grow every tree that is pleasant to the sight and good for food." The garden of Eden, as well as the present world, was framed not merely to gratify the animal instincts of man, but to call forth his spiritual affections. To the beast of the field, the trees are merely good for food; before his brutal eye, no beauty adorns nature. "And it came to pass, when men began to multiply on the face of the earth, and daughters were born unto them, that the sons of God saw the daughters of men that they were fair; and they took them wives of all which they chose." The beast of the field is drawn towards the female because of mere animal instinct; but man is drawn towards woman by a spiritual sympathy—because she is fair. It is thus the perception of the beautiful which elevates man above the brute, and raises him towards that spiritual world which his "heaven-erected face" was formed to contemplate.

Now, in the field of creation, the object which exerts the most potent influence over man is woman. It is her charms and her plighted love that endear the world to him, and make it a home. Her beauty, and her grace, and her gentleness are associated with every hope, with every fear, with every joy and every sorrow that are woven into the varied thread of his life. She is the only being whose life is written with his in history. They are the only actors on the great and mysterious drama of intellectual life.

> "For contemplation he, and valour formed;
> For softness she, and sweet attractive grace."

The sublime part of contemplation and of valour man performs; the beautiful part of softness and of sweet attractive grace, woman performs. Of these parts, human life is made up. Nature has been planned for the performance of both these parts. The scenery on the great theatre is painted so as to harmonize with the characteristics of both the actor and the actress, and the different parts which they perform in the drama of life. The sublime objects of nature are associated with the heroic sentiments, which constitute the distinctive characteristics of man; and the beautiful objects of nature are associated with the gentle affections, which constitute

the distinctive characteristics of woman. In a word, the qualities of sublime objects are masculine, and those of beautiful objects are feminine.

We are now prepared to unfold our peculiar theory of the beautiful in nature. In order to do this, it was necessary to say what we have of the sublime, though our purpose is to write only of the beautiful.

Our theory is, that all beautiful objects in the material world produce within us impressions and feelings analogous to those awakened within us by our converse with woman;* and that the sentiments which become associated with beautiful objects, and which beautiful objects have a natural fitness for expressing, are those which woman is specially formed for awakening; and that all these objects, therefore, are associated with woman, borrowing her beauty. Woman thus, in a certain sense, becomes the spiritual dispenser of beauty to the world.

We beg it to be noted, that we do not maintain that all the beauty of natural objects is borrowed by association from woman. But on the contrary, we maintain that upon the principle of *impression*, which we have so fully illustrated, beautiful objects have an intrinsic power to produce a peculiar impression; and that upon the principle of *resemblance*, an analogy is felt between this impression and that awakened by the presence of woman; and that thus her charms become associated in the mind with these objects, and impart to them a borrowed influence. For example: a rose-bush blooming in the dew of the morning will produce upon us an impression of such a nature as to cause us to personify it as a female, and to speak of it as the *blushing* rose, and apply to it other epithets which have no real significance but as applied to woman. That the rose-bush in bloom has a peculiar fitness, by its very constitution, to produce this impression, we cannot doubt. It is an adaptation between external physical nature and the spiritual constitution of man. But if woman had never been created, this impression could not have suggested to man her charms, and consequently could not have had anything like its present power over his heart. For it is unquestionably true that to this suggestion the rose-bush owes much of that influence which we call its beauty.

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* Burke enounces a somewhat kindred doctrine. "Beauty," says he, "is a name I shall apply to all such qualities in things as induce in us a sense of affection and tenderness, or some other passion the most nearly resembling these." Of all the great minds who have figured in modern times in the practical affairs of life, none had nearly so intense a susceptibility of the beautiful as Burke. He has therefore caught the true characteristic of the beautiful, and has correlated the beautiful with its proper passion. But still he was very far from seeing clearly the true theory of the beautiful. There are certain sophisms connected with the subject which perplexed and confused his judgment, and led him to look too much at the physical, and not enough at the spiritual side of the question. He, for instance, makes *smallness*, instead of *delicacy*, a characteristic of beauty. Physical ideas predominate throughout his whole theory.

All beautiful things are suggestive of some tender sentiment; because they impress the mind with a vague feeling near akin to the sentiment.

We will now proceed to prove and illustrate our theory. The proofs and illustrations are exhibited in poetry, that great mirror where all the beautiful objects of nature are reflected in the exact impressions which they make upon the heart of man. This is the mode of examining the subject which experimental philosophy points out. For, in poetry, we have the æsthetic relations which the beautiful objects of nature bear to the human mind, and which they bear to each other, already proved by actual experiment in the modes in which they have affected the minds of the poets. For as these objects affect the minds of the poets, so do they affect, though in a less degree, the minds of all men. Let us see, then, how the poets have described the morning, that most beautiful period of the day. Milton says:

> "Now morn, her rosy steps in the eastern clime
> Advancing, sow'd the earth with orient pearls."

Again:

> "Sweet is the breath of morn, her rising sweet
> With charms of earliest birds."

In these descriptions, the chief beauty consists in personifying the morning as a woman; in no other way could that period of the day be set forth with such exquisite effect. But it is not the genius of Milton alone that has thrown over morning the beauty of woman; Thomson has said:

> "The meek-eyed morn appears, mother of dews."

In what other way could poetry give as great charms to a description of morning? Shakspeare, in his highest and divinest imaginings, clothes morning in conceptions of beauty borrowed from the charms of woman:

> "But look, the morn, in russet mantle clad,
> Walks o'er the dew of yon high eastern hill."

Again:

> "Night's candles are burnt out, and jocund day
> Stands tip-toe on the misty mountain tops."

These beautiful descriptions of morning attain the highest possible ideal in poetry; genius can accomplish nothing finer. Homer has employed the same form of description:

> "Aurora now, fair daughter of the dawn,
> Sprinkled with rosy light the dewy lawn."

And the most beautiful of the seasons is described under a feminine personification. Thomson says:

"Come, gentle spring; ethereal mildness, come,
And from the bosom of yon dropping cloud,
While music wakes around, veil'd in a shower
Of shadowing roses, on our plains descend."

This description of spring seems borrowed from Dante's description of his beloved Beatrice descending from heaven to lead him to paradise:

"Thus in a cloud
Of flowers, that from those hands angelic rose,
And down within and outside of the car
Fell showering, in white veil with olive wreath'd,
A virgin in my view appear'd, beneath
Green mantle, rob'd in hue of living flame:
And o'er my spirit, that so long a time
Had from her presence felt no shudd'ring dread,
Albeit mine eyes discern'd her not, there mov'd
A hidden virtue from her, at whose touch
The power of ancient love was strong within me."

Thomson has, in fact, borrowed the charms of Beatrice to beautify the spring. The peculiar beauty of the description is a radiance left by her lovely person and spirit on the earth, whose horizon she appeared in just long enough to captivate the great soul of Dante, and awaken within him the ideal of beauty and the passion of love, and like a meteor to pass away. But if the description be original with Thomson, it equally illustrates our theory of the beautiful; for Thomson describes spring as Dante did Beatrice. And Campbell says:

"The queen of spring, as she passed down the vale,
Left her robe on the tree, and her breath on the gale."

And Burns, in his elegy on Thomson, says of spring:

"While virgin spring, by Eden's flood,
Unfolds her tender mantle green,
Or pranks the sod in frolic mood,
Or tunes Æolian strains between."

On another occasion, Burns says:

"Now rosy May comes in with flowers
To deck her gay, green spreading bowers."

Spenser says:

"Then came May, the fairest maid on ground,
Deck'd all with dainties of her season's pride,
And throwing flowers out of her lap around."

Every poet, when he wishes to present spring in its highest beauty, has clothed it in the charms of woman; and the moon, as she walks abroad in her mild beauty, is always described by poets as a woman. Shakspeare says:

"Where Phœbe doth behold
Her silver visage in the wat'ry glass
Decking with liquid pearl the bladed grass."

And Milton says:

"Till the moon,
Rising in clouded majesty, at length
* * * Unveil'd her peerless light,
And o'er the world her silver mantle threw."

Again he says:

"To behold the wandering moon
Riding near her highest noon,
Like one that has been led astray,
Through the heaven's wide pathless way,
And oft as if her head she bow'd
Stooping through a fleecy cloud."

And Burns, speaking of the moon, says:

"Now Phœbe in her midnight reign
Dark muffled, view'd the dewy plain."

When we look, too, at the descriptions, by poets, of the flowers that smile so modestly amidst the glories of nature, we find them weaving around the flowers associations borrowed from woman. Prior thus speaks of the cowslip:

"The cowslip smiles, in brighter yellow drest
Than that which veils the nubile virgin's breast."

Burns' "Address to a Mountain Daisy" clusters with sentiments inspired by woman.

"Wee, modest crimson-tipped flower,
Thou's met me in an evil hour:
For I maun crush amang the stoure
Thy tender stem.
* * * * *

Thou, in thy scanty mantle clad,
Thy snawy bosom sunward spread,
Thou lifts thy unassuming head
In humble guise;
But now the *share* uptears thy bed,
And low thou lies!

Such is the fate of artless maid,
Sweet flow'ret of the rural shade!
By love's simplicity betray'd
And guileless trust,
Till she, like thee, all soil'd is laid
Low i' the dust."

Take out of this poem the associations with woman which are interwoven into it, and all its beauty is gone.

But it is needless to multiply examples, when the reader's memory can furnish him with innumerable instances in which poets have personified beautiful objects as woman. It has been done in all ages, in all literatures. Because the same analogies on which the personifications are founded have been felt in all ages by the poet; and the mind by the necessary laws of association clothes the objects in the beauty of woman.

It is not, however, in the personifications only that the association of material objects with the beauty of woman is indicated. The whole language of poetry indicates the same fact. The spiritual thread of woman's beauty is interwoven through all its richest diction. The choicest epithets are instinct with the lovely characteristics of her soul. Her modesty, her innocence, her blushes of purity, her delicacy of sentiment, and her other charms, all breathe in the epithets applied to the flowers of the field. The *modest* violet, the *innocent* lily, the *blushing* rose, the *delicate* myrtle are all inspired by woman's winning sentiments. And even the rich gems of diamond, and topaz, and pearl, which hang in brilliant lustre around her person, derive beauty from her charms; as the epithets applied to their qualities clearly denote. Indeed, look where we may throughout that panoramic view of nature's beauties which poetry presents, and we discern a halo of woman's beauty about them all, increasing their power over the human heart. There is a mysterious analogy between these objects and the qualities of woman; they are therefore bound together in the linked sweetness of association. The epithets applied to them are the expression of what the poet feels in viewing them; and what he feels are the sentiments which the peculiar graces of woman specially awaken in his heart.

After the many proofs and illustrations which we have adduced, it cannot be well doubted, that there is a felt analogy between the beauty of the various objects in nature, and that of woman, and a consequent association between them in the imagination by which the influence of these objects over the human heart is greatly heightened. Upon no other principle can the fact, that they have been associated in the imaginations of poets in all literatures, be accounted for.

But our theory does not stop here; our analysis does not, like Burke's, stop at a mere physical theory of beauty, but it reaches to the spiritual significance of matter. This we will now proceed to show.

It is not the mere form of woman that inspires us, any more than it is the mere form of other objects which impresses us with their beauty. For, as captivating as is the external form of woman, with all its refined fitnesses, still how infinitely less glorious

is it than the soul within, which woos, and wins and purifies the heart of man until he feels that the winning graces which come so artlessly from the pure female heart are a witchery bestowed by the Creator, for the very purpose of holding him fast in the enchanting thrall. The female form is but the mute language of the soul; for every part of the form breathes forth expression. The heart is the sculptor of the face and the form, moving and moulding them with its every emotion; and the changes that are constantly wrought in the ever varying sculpture are adapted by the Creator to express the various emotions of the heart, through all the fluctuations of sentiment.

Just as the form of woman is expressive of her sentiments, so is every beautiful object in nature expressive of some feminine sentiment, which calls up, by suggestion, the charms of woman. The rose has expression, the lily has expression, the violet has expression, the myrtle has expression, and so has every object in nature. They have not, it is true, a soul moving within them; Neither has the sculptured marble a soul within it; yet it breathes forth the expression of the Venus de Medici and the Greek Slave. Neither has the lifeless corpse a soul stirring within it, yet that it has expression no one will deny,

"Who that hath bent him o'er the dead,
Ere the first day of death is fled,
Before decay's effacing fingers
Have swept the lines where beauty lingers,
And mark'd the mild angelic air,
The rapture of repose, that's there,
The langour of the placid cheek,
And—but for that sad shrouded eye
That fires not, wins not, weeps not, now,
And but for that chill, changeless brow,
Where cold abstraction's apathy
Appals the gazing mourner's heart,
As if to him it could impart
The doom he dreads, yet dwells upon:
Yes, but for these, and these alone,
Some moments, ay, one treacherous hour
He still might doubt the tyrant's power;
So fair, so calm, so softly seal'd
The first, last look, by death reveal'd."

Such, then, is the expression of even the lifeless corpse. Each passion is connected with a material machinery subservient to its expression; and this machinery, even when at rest, speaks to our sympathies. It is this mysterious adaptiveness of matter moulded into form to express the various manifestations of woman's spirit, that constitutes the beauty of objects in nature. It is the sentiment expressed by them with which we sympathise. For spirit sympathises only with spirit. To a thing which expresses nothing, the heart must of necessity be indifferent.

Having now explicated the theory of the beautiful in the material world, we will, in conclusion, confirm it by one general practical illustration, in order that the theory may be realized as an actual experience in the life of man.

When Adam was placed in the garden of Eden, he was, it is probable, in a more beautiful place than any which has since been beheld by man. "Every tree that is pleasant to the sight" grew around the scene, amidst rivers and green banks, and all that constitutes material beauty. Yet can any one believe that its enchantment was not greatly heightened when woman appeared?

> "So lovely fair
> That what seem'd fair in all the world, seem'd now
> Mean, or in her summ'd up, in her contain'd,
> And in her looks, which from that time infus'd
> Sweetness into his heart, unfelt before,
> And into all things from her air inspir'd
> The spirit of love and amorous delight."

Must not Eden from this hour have possessed new charms for Adam? Must not associations with the charms of Eve have begun to cluster around every beautiful object in the scene of their abode? No one can doubt it. Constituted as man is, it was impossible for it to be otherwise. We are prone to look upon all this as idle romance; but it is real history. In our soberest moments of meditation upon the first abode of man, we cannot believe that Milton, in the lines we have quoted, is any more than a faithful historian of realities.

Because we have thus far spoken only of *man* as realizing the theory of the beautiful, it must not be inferred that we consider woman as unconscious of the affinity of her graces with those of nature. When Eve stood by the clear streams and beheld herself and the flowers on the banks mirrored together before her, she saw and felt the similitude of their graces. The blush of her cheek was upon the flower; the delicate lineaments of her form were pictured in its figure; and a mystery of association linked them together.

Such was woman in Eden. Adam beheld her mirrored in the beauty of its scenery. When he was driven out, was the beauty of nature divested of its associations with Eve? Did the flower no longer wear her blush upon its face? In this world of bustle, ambition, avarice, and crime, woman is still associated with the beauty of nature; as poetry amply testifies, and philosophy now proclaims.

Art. II.—THE SIX DAYS OF CREATION.

The Six Days of Creation; or, the Scriptural Cosmology, with the Ancient Idea of Time-Worlds, in distinction from Worlds in Space. By Tayler Lewis, Professor of Greek in Union College. Schenectady: G. Y. Van Debogert. London: John Chapman. 1855.

The Religion of Geology and its Connected Sciences. By Edward Hitchcock, D. D., LL.D., President of Amherst College, and Professor of Natural Theology and Geology. Ninth thousand. Boston: Phillips, Sampson & Co. 1854.

The Plurality of Worlds. A new edition. To which is added a Supplementary Dialogue, in which the Author's Reviewers are Reviewed. Boston: Gould & Lincoln. 1855.

Essays on the Spirit of the Inductive Philosophy, the Unity of Worlds, and the Philosophy of Creation. By the Rev. Baden Powell, M.A., F.R.S., F.R.A.S., F.G.S., Savilian Professor of Geometry in the University of Oxford. London: Longman, Brown, Green & Longmans. 1855.

The opening chapter of the Bible has been the battle-field, within the last half century, of revelation, on the one hand, and three distinct sciences, astronomy, geology, and physiology, on the other; each of the three, seemingly, instinctively aware of the truth, that the demolition of this chapter would be the demolition of Christianity. We say, of the truth; for truth it is, however some may try to persuade themselves to the contrary. Were the Bible, indeed, what the dry, hard criticism of the day would make it, a collection of pamphlets, arranged with little or no regard to order, external or internal, and with no other bond of unity than the thread and paste of the binder, we might spare, perhaps, a page, even the opening one, without much loss: it would be only one gone out of a thousand. But so far is this from being actually the case with it, in no one thing is that wondrous book more wondrous than in the *wholeness* of the impression which it makes upon the common mind. It has been treated as no other book ever was treated; cut up into detached sentences by an artificial and often arbitrary division of chapter and verse, and thus made, to the eye, a collection of aphorisms and isolated proof-texts, good for nothing but to establish some knotty point in divinity. And yet this treatment of it, which one would have supposed beforehand would have utterly disintegrated it, has actually added to the wholeness of impression above referred to, by making it, even to the most casual observer, unlike all other books, and so giving it greater sacredness in the common estimation; so that, on the whole, we think it has gained more than it has lost by the process, and should be lothe to see the familiar division done away with.

But this is not the only, or, indeed, the chief reason, why the demolition of the opening chapter would be the demolition of the whole book: its doctrine of the unity of the human race and of the position of our earth in the system of the universe lies at the foundation of the incarnation, as that lies at the foundation of Christianity,—or, at least, of all that is distinctive in it, in the estimation of nine-tenths of Christendom. We feel, then, that in fighting for it, we are fighting *pro aris et focis*, and in such a cause we are ready to do battle to the death with any and all adversaries.

And who are the doughty champions that thus summon us to the field? What is Geology that it should blow its trumpet so loudly? An infant science, hardly yet out of leading-strings, and which, in its efforts to go alone, has met with many an unlucky tumble, and gone limping off the arena. The theories of its broaching seem as if got up on purpose to startle and bewilder us with their number and variety. Their name is legion, and they have hardly a distant family likeness to one another. They come and go like carriages in a funeral procession, or clouds on a summer sky; each new figure, in its turn, like the sliding figure in the magic lantern of the showman's exhibition, passing out of the field of view, on its back, to give place to that which has supplanted it, and which is, in its turn, to be supplanted by another.

These geological *formations*, (to change the figure,) in no two of which are there to be found the same *fossil* remains, bid fair to puzzle not a little the palæontologists of the *twenty-ninth* century, who, reasoning like their progenitors of the *nineteenth*, will argue most convincingly that *strata* so unlike, instead of having been *deposited*, as we know them to have been, on the average, one in about every five years, must have been at least five thousand years each in the forming.

Let us not be misunderstood. We are not finding fault with geology for having, like every other science, to creep before it can toddle, and toddle before it can walk: what we do find fault with it for is its insisting so pertinaciously that its toddling and its creeping are not toddling and creeping at all, but *bona fide* walking. We are glad, however, to acknowledge, that it is beginning at length to go alone; let it but once feel itself fairly on its own legs, and master of its own movements, and we have no fears but that it will be found side by side, and hand in hand with revelation.

What we have said of geology will apply to the other sciences above alluded to, astronomy and physiology: it is not the demonstrated *facts* of these sciences that conflict, or seem to conflict, with the Bible, but only crude conjectures, built upon assumptions that cannot bear their own weight, much less that of the incumbent superstructure.

We have been led to these remarks by the work whose title

stands first on our list at the head of this article, and whose publication marks an era in Biblical hermeneutics. It is an attempt,—in the main, a successful one,—to get at the meaning of the record philologically, and not geologically, astronomically, or physiologically.

This is as it should be: it is the province of philology to determine the possible meaning or meanings of a passage; that done, and the point settled in any particular instance, that the language of a passage is susceptible of more than one interpretation, then, and not till then, may geology, astronomy, and physiology be called in to help determine which of the possible interpretations is the true one. We say, to help determine; for the powers of philology are not exhausted when it has determined the possible interpretation; it has to do with probabilities as well as possibilities,—more to do with them, oftentimes, than either of the other sciences, or all of them together.

For instance, there are two geological interpretations of the Mosaic cosmogony. The first of these interpretations makes the *days* to be natural days of twenty-four hours each, and the six days' work the *fitting up* of the earth and calling into being the *existing* species of plants and animals, and interposes an indefinite period between the original creation of "the heaven and the earth," spoken of in the first verse, and the work of the first day, spoken of in the four following verses, during which indefinite period all the fossil species of the several formations, from the protozoic to the pentezoic inclusive, were created. The second interpretation makes the *days* undefined periods of probably thousands, perhaps millions, of years in duration, and confines to these days the *whole* work of creation. These two interpretations are equally, or nearly equally probable, so far as *geology* is concerned, but philology shows an overwhelming probability in favour of the latter. It is clear, then, that philology has to do with the probabilities as well as the possibilities of an interpretation; that it is as much its province to weigh the one as to pronounce upon the other. But to do this satisfactorily, it must proceed upon fixed principles of interpretation, otherwise it will arrive at untrustworthy results.

We often hear it said, that, to get at the meaning of a passage, we should take the words in their plain, obvious sense. To this the ready and sufficient answer is, that what is plain and obvious to one man, is often anything but plain or obvious to another. We once heard a layman expounding the first Psalm, and he interpreted "standing in the way of sinners" to mean "being obstacles or stumbling-blocks in their way to heaven." That was to him, as it would be to plain men generally, the "plain, obvious" interpretation of "standing in the way." Had he looked, however, only a very little below the surface, he would have seen that the phrase, taken in its connection, could not have that meaning; that

it stood in the midst of a climax, and signified a *consorting with* sinners, a consorting more intimate than "walking in the counsel of the ungodly," but less intimate than "sitting in the seat of the scornful."

Take another instance. What do plain readers of the English Bible understand by Psalm lv. 15: "Let them go down quick into hell?" Undoubtedly they take the word "quick" to mean quickly, i. e., speedily; that is to them its "plain, obvious" meaning. And yet the original shows that it means "alive"—a common meaning of the word in the translators' day, and preserved still in the words *quicksilver* and *quicksand*, i. e., *live* silver and *live* sand, and in the phrase, *to the quick*, spoken of the exceedingly sensitive nerves under the nails of men, and the hoofs and claws of animals.

One more instance. What idea does the phrase, *benefit of clergy*, convey to the common mind? Manifestly, the having a clergyman to attend upon a felon in prison and on the scaffold. That is the "plain, obvious" meaning of the phrase, to all who are unacquainted with its origin—that is to say, to nearly all the uneducated, and probably one half the educated. Yet one could not well hit upon a meaning more wide of the mark.

We see, then, that it will not do to take the "obvious" meaning of a passage as necessarily the true one; it may be, but very probably it may not be. We wish this borne in mind, as it will come in play by and by, when we come to consider the meaning of the word, *day*, in the account of the creation.

One other thing, too, we wish borne in mind, and that is, that the language of the Bible is the language of the common people, and not of the schools. In other words, it is *phenomenal*, and not scientific. The distinction between the two is well set forth by Professor Lewis: "The first employs only those *appearances* which present themselves directly and primarily, or, as we might say, spontaneously, to the sense—that are alike in all men, and thus directly represent for all men the ineffable fact standing behind them, at however remote a distance. The second, or scientific, takes more interior phenomena, either as discovered by closer examination of the prima facie appearances, or as suggested to the mind's conception by some hypothesis in respect to their relations. * * * The object of the first is simply to give the more vivid thought of the ineffable fact, as a fact, without reference to its philosophy. The object of the second is to explain the relation of phenomena to each other, and, if possible, (a thing, however, which science has never done, and never will do,) to trace their connection all the way up to the great ultimate truth or agency they represent." (Pp. 41, 42.) There is yet another kind of language, the poetical, the design of which is "not only to give a clear thought, like the first, but to connect it with some strong emotion." It therefore "selects its phenomena, or *makes* them,

as the name poetry implies, or borrows them from other objects, or makes out of them analogies or comparisons for poetical effect." (Ibid.)

"Now, in reference to these three kinds of language, we may say, that the Bible can employ, and does employ most copiously, the *first* and the *third;* but it cannot make use of the *second.*

"The reason is, that the adoption of scientific language, as above defined, would be an endorsement of its absolute correctness, whilst the responsibility of no such endorsement could be ever implied in the use of the others. Revelation could not so endorse the language of science, because it is continually changing. Subsequent discoveries are ever showing its incorrectness and deficiency even in respect to the relations of phenomena themselves (which is its peculiar province), whilst from the great ultimate agencies it is ever at a distance which no formula can measure. Thus, to illustrate our leading thought by examples and terms suggested by the work of the second period, we may say that the words and conceptions, *firmament, sky, water* above and water below the firmament, mean the same in simple phenomenal language that *atmospheres, rarefactions, condensations, reflections and refractions* represent in scientific,—the same, too, that the *treasures* or *store-houses* of the rain, the 'molten looking-glass,' the *outspread tent*, the celestial *curtains*, and the *cloudy canvass* image to us in the poetical. Each represents, in its own way, the same remote facts or apparatus of physical agencies. Each, however, gives a distinct version; and each is to be interpreted by its own grammar and lexicon." (Ibid.)

Again: "In the Mosaic account the phenomenal is everywhere and everything. It is addressed directly to the senses, or to the intellect through the senses. It sets forth the origin, not of what *is* in itself, but of what we see, and as we see it, τὰ βλεπόμενα, τὰ φαινόμενα, (Heb. xi. 3;) 'the things that are *seen*,' or 'the things that do *appear*,' as representative, τῶν νοουμένων, of the powers that are *understood* or believed to exist back of them, and which will still exist back of them, however much our phenomenal language may be changed or improved by the progress of science. * * * She only, as she advances, substitutes other and more interior phenomena in place of the outward, the earlier, the simpler, the more vivid, which she casts away with so much scorn. Still the ultimate fact or power is *ineffable;* and, to a higher science, in some most remote *yom olam*, or latter 'day of eternity,' the language of our books may actually appear as child-like, as erroneous, as that of Moses and Job does to a savan of the nineteenth century. We may even say more erroneous; for the language of science, when it fails or has become obsolete, exhibits always the appearance of childish folly and pretense, whereas that drawn from primal and universal phenomena never loses its early bloom and manliness. Who can help feeling how much more

truthful, as well as more dignified, is the language of Moses than would have been the cycles and epicyles, and other technics of the exploded Ptolemaic science? Ages hence, too, how much more truthful may it be felt to be, than our gravities, our centripetal and centrifugal forces, our nebular condensations, or any of those once lauded terms which a future astronomy or meteorology may lay away among the rubbish of almost forgotten centuries.

"Science has indeed enlarged our field of thought, and for this we will be thankful to God and to scientific men. But what is it, after all, that she has given us, or can give us, but a knowledge of phenomena—of *appearances?* What are her boasted laws, but generalizations of such phenomena ever resolving themselves into some one great fact, that *seems* to be an original energy, whilst evermore the application of a stronger lens to our analytical telescope resolves such seeming primal force into an *appearance*, a manifestation of something still more remote, which, in this way, and in this way alone, reveals its presence to our senses. Thus the course of human science has ever been the substitution of one set of conceptions for another. Firmaments have given place to concentric spheres, spheres to empyreans, empyreans to cycles and epicycles, epicycles to vortices, vortices to gravities and fluids, ever demanding for the theoretic imagination other fluids as the only conditions on which their action could be made *conceivable.* * * * If, then, absolute correctness of representation is aimed at, a revelation of God's creative acts could no more endorse one scientific theory than another. What would now have been the credit of the Scriptures, had they been written in the style of the Aristotelian or Ptolemaic science, which, in its day, perhaps, was thought to be the ne plus ultra of astronomical truth?—a system so far complete, that, if it did not contain all the facts, it was supposed, at least, to furnish the best language and the best method through which they could be represented. And yet this grand old book of God still stands, and will continue to stand, though science and philosophy are ever changing their countenances and passing away. It is one of the few things in our world that never becomes obsolete. It speaks the language of all ages, and is adapted to all climes. Ever clear and ever young, it has the same power for the later as for the early mind; it is as much the religious vernacular of the occidental as of the oriental races. Instead, then, of being its defect, it is its great, its divine wisdom, that it commits itself to no scientific system or scientific language, whilst yet it brings before the mind those primal facts which no science can ever reach, and for this purpose uses those first vivid conceptions which no changes in science and no obsoleteness in language can ever wholly impair." (Pp. 105–111.)

We have given these long extracts for two reasons; first, to

give our readers a taste of the work, (and we are much mistaken if it does not lead them to seek a nearer acquaintance with it; and, if it should, we can assure them that they will not be disappointed,) and, second, to make plain, at the outset, the distinction between the three kinds of language, the phenomenal, the poetic, and the scientific,—on a right appreciation of which depends all sound interpretation of the word of God.

We now proceed to the examination of the record, as it is presented to us in the first and second chapters of Genesis: its language is the simply phenomenal; it has nothing in it of the poetic, as will be seen on a comparison of it with the thirty-eighth chapter of Job, and the one hundred and fourth Psalm; neither has it in it anything of the scientific; it is a plain, unadorned narrative of the *facts* of creation, couched in the language of *appearances*,—the only universal language, and therefore the only language that revelation, if it is to be understood by all, learned and unlearned, can make use of.

"*In the beginning God created the heaven and the earth.*" What is the beginning here spoken of? Professor Lewis says it cannot be the beginning mentioned in St. John's Gospel; but in this we cannot agree with him. On the contrary, we believe that it is this very beginning, and no other, that the Apostle refers to. The assertion of the existence of the Logos before all creation, is contained, not in the phrase, *in the beginning*, but in the word, *was*, (ην, not εγενετο.) In the beginning, the Word was already in existence; of course, therefore, He had no beginning. "All things were made by Him," says the Apostle; clearly, it seems to us, referring to this very creation of "the heaven and the earth." In our view, the beginning here spoken of *is* "the absolute beginning of all being," i. e., all created being. Such *is*, *we* think, "the easy and natural impression one would get from the simplicity of the narrative." Nor is there any need of supposing "a chasm between the first and subsequent verses." The language *does* "cover the whole process that follows," but it covers *also* the "primordial act." In the first verse, the sacred writer announces the original creative act, the calling into being of the *hyle*, or elemental matter, and in the following verses he goes on to describe the subsequent creative *process* so far as it has to do with the earth and the visible heavens *as related to the earth*. The other subsequent creative processes, those that have to do with other worlds, or other systems, or other orders of beings, he does not touch upon, because the object for which he writes does not require it of him. There is no break in the narrative, however; the continuity is perfect. If a history of Athens were to begin with a brief account of the Pelasgians and other early inhabitants, surely it could not be charged with a want of continuity because its latter portion did not embrace all Greece, but only a small part of it.

But other objections are brought against our interpretation. "There are not," says Professor Lewis, "the least intimations in the Scriptures that angels were created at the same time with our present world; but, on the other hand, not a few passages from which we might fairly infer the contrary." Where these passages "not a few" are to be found, we are at a loss to conjecture. We can recall but a single passage that even seems to come under that category; we refer to Job xxxviii. 7. But a careful examination of the connection will show, that it was at the end of the second or beginning of the third day's work that this jubilant shout went up. For the foundations spoken of in the sixth verse are not the foundations upon which the earth rests; for Job tells us expressly, (chap. xxvi. verse 7,) that "He hangeth the earth upon nothing;" but they are the foundations spoken of in Psalm xviii. 15, which were laid bare at the rebuke of Jehovah, "at the blast of the breath of his nostrils:" that is to say, the bottom of the sea, on which rest the pillars of the earth, or the pillars of heaven; for they are called by both names indiscriminately—pillars of the earth, because they are sunk in it, and belong to it; pillars of heaven, because they bear up the *tebel*, Gr. κόσμος, Lat. *mundus*, the starry heaven, or visible mundane sphere; the "round world," or "compass of the world," as the Psalter renders it. Accordingly we are told, (Psalm xxiv. 1, 2,) "The earth is Jehovah's, and the fulness thereof; the compass of the world, and they that dwell therein: for he hath founded it upon the seas, and established it upon the floods." He hath founded *it*, i. e., the compass of the world, the visible heaven, not the earth; for certainly the earth is not established upon the seas, but the seas upon the earth. That we are right in our interpretation, is put beyond all question by the passage, 1 Samuel ii. 8; "For the pillars of the earth are Jehovah's, and he hath set the world" (*tebel*, the visible heavens) "upon them."

Now, all this was, as we have said, the work of the second and the earlier half of the third day. Keeping this in mind, let us now turn again to the passage in Job (chap. xxxviii. 4–13), and we shall see that it was not at the beginning of the first, but at the end of the second, or the beginning of the third day, that "the stars of the morning sang together." Indeed, Professor Lewis seems to admit as much, (pp. 124, et seq.,) though his language afterwards (p. 400) might bear another construction.

There were, then, two whole days, each of them, as we shall presently see, thousands, perhaps, or even millions of years in duration, in either of which those stars of the morning, those eldest-born sons of creation, might have been brought forth.

But another objection is taken to our interpretation. The "metaphysical sense of *create*—that is, of *making something out of nothing*, is," we are told (p. 50), "a modern one, and comes *entirely*

from later use;" and we are cautioned against being "misled by carrying back into an ancient word a *purely* modern conception." The caution seems to us out of place. Admitting, for a moment, that the conception is a purely modern one, was not the Hebrew, in the time of Moses, a "modern" language? If it was the language of Adam, it was twenty-five hundred years old; and even if it dated back only to the time of Abraham, (and we cannot well assign it a later origin,) it had been in use at least five hundred years, a sufficient time, surely, for the "primitive image" of a word to have "fallen away."

But is it so very certain that the metaphysical sense of *create* is a modern one? We think not. Undoubtedly, metaphysical terms and conceptions belong generally to the manhood of a language and a people, as well as to the manhood of an individual; but this, we think, belongs to the childhood of both: we very much doubt if Professor Lewis can recollect the time when it was not familiar to him. But be this as it may, certainly the metaphysical conception of creation is not more abstract than that of self-existence; yet this latter was familiar to the Hebrews in the time of Moses, as is plain from Exodus iii. 14; "and God said unto Moses, I AM THAT I AM; and he said, Thus shalt thou say unto the children of Israel, I AM hath sent me unto you." It was also familiar to the early Greeks: in Homer, while men are γεγαῶτες, the gods are αἰὲν ἐόντες. Indeed, Professor Lewis himself, in his "Plato contra Atheos," (p. 175,) speaking of the distinction between these words, says it is "probably coeval with the first elements of the language;" and that, though it does not "appear so obvious in ordinary use," its "spirit" is "diffused throughout the Greek literature, and is probably to be found, to some extent, and under various forms of expression, in almost every known language." He even goes so far as to make the suggestion, (and we fully agree with him in it,) that the distinction is an "antidote," provided by God himself, "against that materialism to which our depraved nature is so continually tending." And, further on, after comparing the German tongue, in this respect, with the Greek, he adds (p. 178), "Materialism can at best only babble in other languages; it cannot speak at all in Greek or German, without the use of words which must continually remind it of its absurdities and contradictions." Surely, after this, it will not do to deny the Hebrew word for *create*, in Genesis i. 1, its metaphysical sense, because of its phenomenal origin; and so Professor Lewis seems at that time to have thought; for in another part of the same work, (pp. 273, 274,) he tells us that "that *originating act*" (the *italics* are his) "which took place in the beginning, mentioned Gen. i. 1," is represented (Rom. iv. 17 and elsewhere) as "a *calling* of something from a state of non-existence both in respect to matter and form,"—the very thing we are here contending for.

There is another point in which we are not quite sure that we agree with Professor Lewis, because we are not quite sure that we understand him. After telling us that "all the primal forces from which come the things seen lie entirely out of the field of the sense," and that "this must be especially true of the great primal originating force of all," he adds (p. 47): "We must be careful, however, not to regard it as simply the divine power continually energizing in space. Such a thought is full of peril, as making matter but an emanation of Deity, or a part of Deity, and thus involving us in a mere physical pantheism. It is a real entity, distinct from God, which God has originated, and to which he has given an immanent existence of its own in space and time." And again (p. 199): "We must adopt some distinction of fact between the prime originating supernatural energy and the subsequent ongoing, or we resolve God into nature and nature into God,—thus running into atheism on the one hand, or an equally godless pantheism on the other. We may suppose this original divine force ever present as the supporting ground, but not *im-manent* or *permanent* as the immediate causal force in every natural effect." The contrary theory, Professor Lewis maintains, "is unmeaning and absurd, since it supposes *media* which are, in truth, *no media*, but only arbitrary *signs*, having no dynamical connection with the effects. Nature, in this view, would be as irrational as a machinery having all the appearance of mediate dynamical causation, and yet requiring the constant application of the original motive force directly to every wheel, and cog, and strap in the complicated structure."

Now, as we said before, we are not sure that we understand Professor Lewis. In the page preceding the one from which our last quotation is taken, he represents nature as "a regular constant flow of cause and effect, governed by established laws operating uniformly." But the flow must be from something, and the question is, what that something is. We say, and we have no doubt Professor Lewis would agree with us, that it is "the primal originating force;" but how then, nature can be in *any* manner "left to itself," how it can be in *any* sense "a self-subsisting, self-acting power," a "real entity, distinct from God," we do not see. In our view, nature is only a name for the settled, ordinary way of God's working in the material world,—the regular and orderly *procession* of physical events. The phenomena of nature are links in a chain of causation, each several link being the effect of that which immediately precedes, and the cause of that which immediately follows it; and the first link in the series, the direct and immediate effect of the great First Cause. Professor Lewis holds to this, no less than we; but he maintains, if we understand him, that while God is present at the beginning of the chain as the efficient cause, he is present in all the subsequent links only as "the

supporting ground." Professor Powell, in the work whose title we have placed last on our list at the head of this article, seems to go to the other extreme. "It is a common mode of illustration," he says (p. 145), "to speak of the *chain* of secondary causes reaching up to the First Cause. Or, again, fears are entertained of tracing secondary causes too far, so as to entrench on the supremacy of the First Cause. But this is an erroneous analogy; the maker or designer of a chain is no more at one end of it than at the other." To which we answer, then it is no *chain* at all. It is possible, indeed, that Professor Powell may mean that the First Cause is no more *efficiently* present at the beginning of the chain of secondary causes than at the end, and not that He is no more *immediately* present; but if so, he has expressed his denial in altogether too broad terms. It is possible, too, from the occurrence of the word, *immediate*, in the last but one of our quotations from Professor Lewis in the preceding paragraph, that *his* meaning may be the same; but if it is, we do not see how it is to be reconciled with what precedes it about nature being left to itself. In our view, the true account of the matter is this: That the First Cause is present immediately at the beginning of the chain of secondary causes, and only mediately in the subsequent links; but that He is present *efficiently* all along the line of causation, and as truly and as fully at the end, or at any intermediate link, as at the beginning. To say otherwise is to make each several link, not only the instrumental, but the efficient cause of that which succeeds it; which would be a veritable epicurean atheism—a leaving nature to herself, with a vengeance.

After this, it will be readily inferred that our view of the nature of matter is precisely that which Professor Lewis seems to condemn; that is to say, we hold it to be "simply the divine power continually energizing in space;" understanding, of course, by the "divine power," the power of a *personal* God. Wherein this has any affinity with "a mere physical pantheism," we cannot perceive; we had always supposed pantheism to be at war with the very idea of a personal God.

Professor Lewis himself seems formerly to have taken the same view of the case; at any rate, he spoke very respectfully of it. In his "Plato contra Atheos," already referred to by us, he says (p. 279), speaking of the elementary *hyle* of Plato and other Greek philosophers; whether it was merely space regarded as an ἀρχή, or first principle, like the ἄπειρον, or *infinite* of Anaximander; or something similar to the unextended points in the modern theory of Boscovitch; whether it was *the manifestation of the divine power in space, so that visible outward matter would be only those impressions upon soul, of resistance, figure, &c., which are the result of the action of the divine immaterial principle—a theory which, although ridiculed as Berkleian and absurd, gives us all*

the results or properties of matter, which is matter enough for all substantial purposes, while yet it leaves spirit, in reality, the only ὐσια, or essence in the universe—or whatever else," &c.

Here is the very theory for which we are contending, and we could not ourself have expressed it in stronger terms. As to the charge of its being Berkleian, there could not be a greater mistake. The philosophy of Berkley makes matter to be nothing but the subjective impression of each individual mind. But the unextended points of Boscovitch—the mathematical centres of forces, and the forces themselves, have a real objective existence, and are therefore, as Professor Lewis says, "matter enough for all substantial purposes."

We have spoken of nature as a *line* of causation—a continually lengthening *chain* of cause and effect; but it would be more accurate to call it a *concatenation*—an interlacing net-work of links, branching off in all directions from the common centre, or rather from several *foci* or separate centres of creation, situated at various distances from the original starting point. At each of these *foci* the Creator has interposed directly and immediately, starting a new train of causation, and giving to the subsequent nature a power that was not in it before. These interpositions mark the beginnings of the several creative *days*. How many of these days there have been in the history of the universe, we know not; we only know that *six* of them have been devoted to our earth and visible heavens *as connected with it*.

On the consideration of these six days we now enter, and here we join hands with Professor Lewis, and endorse substantially his entire interpretation. We propose to give a brief statement of his results, and to indicate the course of reasoning by which he arrives at them, interspersing occasionally such observations of our own, in illustration of his views and in answer to objections, as the subject may seem to demand.

We are aware that in doing this we put ourselves, in the opinion of Professor Powell, out of the category of "sane inquirers" and "competently informed persons," but we think that when we have given our readers a specimen of his contradictions, they will agree with us that he is not the man to dogmatize on such a subject in a tone so offensive.

"In a former essay I have adverted to the question of discrepancies between science and the language of Scripture generally, and have referred more especially to that notable instance of it, the irreconcilable contradiction between the whole view opened to us by geology, and the narrative of the creation in the Hebrew Scriptures, whether as briefly delivered from Sinai or as expanded in Genesis. In the minds of *all competently informed persons** at

* The *italics* in this and the subsequent extract are *his*.

the present day, after a long struggle for existence, the literal belief in the Judaical cosmogony, it may now be said, has died a natural death. Yet many are still haunted by its *phantom*, which perpetually disturbs their minds with apprehensions equally groundless on collateral points.

"Most rational persons now acknowledge the failure of the various attempts to reconcile the difficulty by verbal interpretation; they have learnt to see that the 'six days of thousands of years' have, after all, no more correspondence with anything in geology than with any sane interpretation of the text; and that the 'immense period at the beginning,' followed by a recent literal great catastrophe and final reconstruction in a week, is, if possible, more strangely at variance with science, Scripture, and common sense." Pp. 457–458.

The passage in the "former essay" above referred to is in the same volume, and is as follows:

"Even at the present day there are not wanting occasional attempts to keep up the hopeless chimera of erecting theories of geology on the Mosaic narrative. It is needless to observe that, as all notion of an accommodation of the *facts* to the text has long since been given up by all *sane* inquirers; these attempts are now merely directed *to explaining away* the sense of the text; in which they no doubt succeed by *such* principles of verbal interpretation as, if fairly applied to other parts, would readily enable us to put on any given passage any required construction.

"All inquirers, possessing at once a sound knowledge of geology and capable of perceiving the undeniable sense of a plain circumstantial narrative, now acknowledge that the whole tenor of geology is in entire contradiction to the cosmogony delivered from Sinai,—a contradiction which no philological refinements can remove or diminish,—a case which no *detailed* interpretations can meet, and which can only be dealt with as a whole.

"I have elsewhere" (Connection of Natural and Divine Truth, p. 245,) "fully discussed this subject, and have there explained the only view which I think the case admits; in one word, that the narrative, as a whole, as it cannot be received as *historical*, may be regarded as a *poetical* representation; adapted, as it was addressed, to the Israelites, as the basis of the institution of the Sabbath. But, be this as it may, real Christianity, I contend, can be no way affected by this or any contradiction to the Old Testament law, with which it has been erroneously mixed up; on the contrary, the palpable discrepancy is valuable, as reminding us the more forcibly of its independence." Pp. 303–305.

The "plain, circumstantial narrative" is, then, it seems, after all, no "narrative" at all, but only a "poetical representation"! If this be not "*explaining away*," we should be glad to know what is.

The Savilian Professor of Geometry is even worse off than M.

Jourdain: he has been speaking *poetry* all his life without knowing it; for if the fourth commandment and the first chapter of Genesis be poetry, where, in the name of all the quiddities, shall we look for plain prose? Seriously, poetry seems not to be in the Professor's line; if he ever "lisped in numbers," they must have been, we think, the numbers of the numeration table. We commend him to a comparison of the thirty-eighth chapter of Job with the first chapter of Genesis: if, after that, he cannot tell the difference between poetry and plain prose, we shall consign him to the category of incurables. Indeed, we are not certain that he has not already consigned himself to it. How he has managed to crowd so many errors into so small compass, is a mystery to us. We never read a work that we felt so continually rousing our pugnacity. The margin of our copy *bristles* with notes of interrogation or admiration on almost every page. Occasionally occurs a paragraph that excites our "special wonder." One such we give, because of its connection with our subject. We take it as we find it, *italics* and all:

"Physical philosophy has doubtless within itself the *germs* of higher knowledge, and presents us with those first elementary notions which are pre-eminently valuable, as subservient to the establishment of theological truth on a rational basis. In such a sense, and within due limits, *theology deduced from philosophy may* be sound and valid. But, in every case, *philosophy deduced from theology must* be *essentially* erroneous and fallacious; it is no longer *philosophy*. It appeals to other authority, and disowns its proper inductive character." P. 302.

Now, the first of these assertions we admit; but how the last can be made out, *that* is (to use the words of the author in another part of the essay) "precisely the point which we fail to apprehend." Philosophy builds her inductions on facts, and she must get her facts from observation or testimony,—nine-tenths, if not ninety-nine-hundredths of them from the latter. How, then, does philosophy "disown its proper inductive character" by taking its facts on the testimony of God, any more than by taking them on the testimony of man? What has the source of the facts to do with the validity of the induction? Manifestly, nothing at all.

One more quotation, and we think our readers will have had enough:

"More recently, the investigations of Mr. Hopkins have tended to connect geology even with dynamics and mathematical laws, and thus to establish its relation, not merely to the *inductive*, but even to the *exact* sciences; not that that name implies any real difference in nature, but merely marks the degree of perfection to which any branch of science has attained." Pp. 54–55.

And this from the Savilian Professor of Geometry! After such a specimen, we think we need give ourselves no further trouble

with him: one who can seriously maintain that the exact sciences differ from the inductive only in degree, and not in kind, is past criticism.

To return to our interpretation, the first point to be determined is, what is meant by the word, *day*? And here our remarks about the plain, obvious meaning of a word will come in. The word day, it is said, as here used, means a natural day of twenty-four hours; that, we are told, is its plain, obvious sense. It is, for the most part, so interpreted, Professor Hitchcock tells us, by geologists and theologians, and he himself agrees with them in the interpretation. Yet he admits (Religion of Geology, p. 66,) that "from the earliest times in which we have writings upon the Scriptures, we find men doubting whether the demiurgic days of Moses are to be taken in a strictly literal sense. Josephus and Philo regarded the six days' work as metaphorical. Origen took a similar view, and St. Augustine says: 'It is difficult, if not impossible, for us to conceive what sort of days these were.'" St. Augustine speaks, in fact, a good deal more definitely on the subject, as we shall see by and by.

Now what was it that led these interpreters to reject the twenty-four hour hypothesis? It could not have been any geological exigencies, for the science of geology was not then in existence; it must have been, therefore, the exigencies of the record itself: let us see, then, what these exigencies are.

In the first place, then, three of these days had elapsed before there were any "lights" in the heaven, to "divide between" them. This was one of the difficulties that led St. Augustine to reject the common interpretation. "Quis ergo animo penetret," says he, "quo modo illi dies transierint, antequam inciperent tempora quæ quarto die dicuntur incipere?" De Genesi ad Literam, lib. ii., ch. 14. Who shall fathom how those days passed, before those divisions of times and seasons which are represented as beginning on the fourth day?

This, then, is one of the exigencies of the record. The other is the representation of the day as made up, not of morning and evening, but, contrary to the natural order, of evening and morning. Perhaps it will be said that Moses so represented it to the Israelites because that was the way in which they reckoned time. But how came they to reckon it in that way? Doubtless from the tradition that had come down to them of the demiurgic days; to explain the latter by the former, then, would be to account for the cause by the effect; which would be preposterous. Indeed, we know of no rational way of accounting for the representation on the twenty-four hour hypothesis; but suppose the days to be indefinite periods, and then the explanation is easy and natural. That this hypothesis is the true one, we shall endeavour to show; and we shall begin by answering the objections usually brought against it.

We take them as we find them in Professor Hitchcock's "Religion of Geology," pp. 64–66.

1. "The word *day* is not used figuratively in other places of Genesis."

If this is a valid objection, then it will follow that a writer cannot use a word figuratively *only* once; he must either use it so more than once, or else not use it so at all: certainly a most singular conclusion. Besides, on *any* hypothesis, the word *day*, in this account of the creation, is clearly used in at least two distinct senses, one as *including* the night, and the other as *contrasted* with it.

2. "In the fourth commandment, where the days of creation are referred to, (Ex. xx. 9, 10, 11,) no one can doubt but that the six days of labor and the sabbath spoken of in the ninth and tenth verses are literal days. By what rule of interpretation can the same word in the next verse be made to mean indefinite periods?"

By the same rule by which not merely "the same word in the next verse," but the identical word in the identical verse can have, *virtually*, two distinct meanings, as in Job xiv. 6: "Turn from him, that he may rest, till he shall accomplish, as an hireling, his day." The day of a hireling is from morning to night (Deut. xxiv. 15); man's day is his "appointed time upon earth." The objection overlooks the whole gist of the comparison, which is, that as God worked six of His days, and rested the seventh, so man, having worked six of *his* days, should rest the seventh. God's working days are no more like man's working days than God's sabbath is like man's sabbath. God's working days have long gone by; He now keeps sabbath; He has ceased from creation; the work He now carries on is His sabbath day work of redemption; according to that of our Lord (St. John v. 17), "My Father worketh hitherto, and I work;" "although," as the Apostle says, "the works were finished from the foundation of the world." Man's celestial sabbath is yet to come. "There remaineth a rest (σαββατισμὸς) to the people of God. For he that is entered into his rest (in heaven), he also hath ceased from his own works, as God did from His," (Heb. iv. 3, 9, 10,) ceased, that is, from earthly toil, to enter on a heavenly sabbath, a sabbath, not of epicurean indolence nor of Jewish restraint, but of genial labor, free from sin, and therefore free from sorrow.

3. "From Gen. ii. 5, compared with Gen. i. 11, 12, it seems that it had not rained on the earth till the third day—a fact altogether probable if the days were of twenty-four hours, but absurd if they were long periods."

So, then, we are to suppose the sacred writer gravely stating the *extraordinary* fact that, for two whole days of twenty-four hours each, no rain had fallen on the earth, and then, lest we should otherwise suppose the soil to have suffered for lack of

moisture, proceeding to inform us how it was supplied during this *long* period, viz., by a mist which went up from the earth and watered the whole face of the ground. Verily, the "absurdity," we think, is on the other side, and our wonder is that Professor H. did not see it; especially as, on his theory, there must have been rain long before even the first day, as is shown by the rain-prints in the coal measures.

4. "Such a meaning is forced and unnatural, and, therefore, not to be adopted without urgent necessity."

That depends on the point of view from which we look at the passage. If we look at it in connection with the fourth commandment, and without taking into the account the fact that God's sabbath is still going on, the meaning may seem to us forced and unnatural; but not if we take it in its connection with the whole narrative in the first and second chapters of Genesis. The objection seems to us to proceed from an inadequate idea of what constitutes a day; it is necessary, therefore, to clear up this point first.

"In the idea, then, of a day," says Professor Lewis, (pp. 152, 153,) in its most general sense, there are four elementary constituent thoughts:

"1st. Its cyclical or periodical nature.

"2d. This periodicity made by two antithetical states characterized by opposite qualities, of which the one kind is the negation of the other.

"3d. Its duration in time.

"4th. The mode in which this duration is marked, and its periodicity determined.

"Of these the first and second are not only *essential*, but constant, catholic, and immutable. The third and fourth are variable and specific. Without its periodicity and its antithetical division, there could not be a day at all. The idea would be wholly lost. No mere division of continuous time, measured merely by a certain arbitrary extent, could answer to the notion, or be entitled to the name. On the other hand, the third and fourth may be varied to almost any degree, and yet the radical idea be preserved. The duration may be twenty-four hours, or twenty-four thousand years."

The day of the moon is thirty of our days; that is, as we reckon them in the torrid and temperate zones; for, in the frigid zones, they are reckoned in an altogether different manner. At the seventieth parallel north and south, there are in the year, (reckoning from the coincidence of the sun's *upper* limb with the horizon, and allowing for refraction,) two hundred and forty-two common days of twenty-four hours, one day of seventy-one common days, and one night of fifty-two; or, reckoning these last two together, [as they ought to be reckoned, notwithstanding they are several months apart,) one νυχθήμερον of one hundred and twenty-three common days. At the eightieth parallel, one hundred and four

common days of twenty-four hours, and one day of one hundred and forty, and one night of one hundred and twenty-one, or one νυχθήμερον of two hundred and sixty-one common days. At the poles, the day, νυχθήμερον, becomes coincident with the year. We have thus terrestrial days of all lengths, from twenty-four hours to eight thousand seven hundred and sixty-six. There is, therefore, in the notion of a day no one fixed and definite length; it may be longer, it may be shorter, and still be as much a day in the one case as in the other.

So much for its duration in time. As to the fourth point, the mode in which this duration is marked, and its periodicity determined, this may be "by risings and settings of a revolving or apparently revolving body, called the sun; or it may be by any cyclical law in nature producing two opposite times of rest and action, of progress and repose, of cold and warmth, of growth and decay; or it may be by any other mode in which there are produced two periods of direct contrast, making up by their alternation the completed cycle." By the first of these methods the first three demiurgic days could not have been determined, as there was then no "great light" in the heaven to "divide between" them; they must have been marked out, then, in one of the other ways. Differing, therefore, in this respect, so essentially from common days, why may they not have equally differed from them in duration? That they did thus differ, we have already brought forward some considerations to show. We shall have more to say on this point before we have done. At present, we proceed with Professor H.'s objections.

5. "This hypothesis assumes that Moses describes the creation of all the animals and plants that ever lived on the globe. But geology decides that the species now living, since they are not found in the rocks any lower down than man is (with a few exceptions), could not have been contemporaries with those in the rocks, but must have been created when man was; that is, on the sixth day. Of such a creation no mention is made in Genesis. The inference is, that Moses does not describe the creation of the existing races, but only of those that lived thousands of years earlier, and whose existence was scarcely suspected till modern times. Who will admit such an absurdity? If any one takes the ground that the existing races were created with the fossil ones, on the third and fifth days, then he must show, what no one can, why the remains of the former are not found mixed with the latter."

"What no one can," says Professor H. We think *we* can, and from the very language of Professor H. himself in his next objection. We will first set down this objection in his own words, and then proceed to examine them both together.

6. "Though there is a general resemblance between the order of creation, as described in Genesis and by geology, yet when we

look at the details of the creation of the organic world, as required by this hypothesis, we find manifest discrepancy, instead of the coincidence asserted by some distinguished advocates of these views. Thus the Bible represents plants only to have been created on the third day, and animals not till the fifth; and hence, at least the lower half of the fossiliferous rocks ought to contain nothing but vegetables. Whereas, in fact, the lower half of these rocks, all below the carboniferous, although abounding in animals, contain scarcely any plants, and those in the lowest strata, fucoids, or sea-weeds. But the Mosaic account of the third day's work evidently describes flowering and seed-bearing plants, not flowerless and seedless algæ. Again: reptiles are described in Genesis as created on the fifth day; but reptilia and batrachians existed as early as the time when the lower carboniferous, and even old red sand-stone strata were in a course of deposition, as their tracks on those rocks in Nova Scotia and Pennsylvania evince."

Now, we submit that the fact stated in this last sentence furnishes a complete answer to the rest of this and to the preceding objection. The "reptilia and batrachians" are notoriously among the most numerously represented fossil vertebrata in the palæozoic group; yet there are numerous species of which no remains have yet been discovered, but which are nevertheless known to have existed by their footprints in several of these formations. Sir Charles Lyell, in his Elementary Geology, (edition of 1855, pp. 397–400,) gives us a description of these footprints at Pottsville and at Greensburg, Pennsylvania, and adds, "A thickness of seventeen hundred feet of strata intervenes between the footprints of Greensburg, before described, and these older Pottsville impressions." In the same connection, he informs us that the footprints of three species of *quadrupeds* have been discovered by Professor H. D. Rogers, in the same red shale, "the 'debateable ground' between the carboniferous and devonian group;" yet no portions of the skeletons of these quadrupeds have yet been found. In another part of his Elementary Geology (pp. 456, 457), he remarks at some length on the danger of building up theories on negative evidence:

"How many living writers are there, who, before the year 1844, generalized fearlessly on the non-existence of reptiles before the permian era! Yet, in the course of ten years, they have lived to see the earliest known date of the creation of reptiles carried back successively, first to the carboniferous and then to the upper devonian periods. Before the year 1818, it was the popular belief that the palæotherium of the Paris gypsum and its associates were the first warm-blooded quadrupeds that ever trod the surface of this planet. So fixed was this idea in the minds of the majority of naturalists, that when at length the Stonesfield mammalia awoke from a slumber of three or four great periods, the apparition failed to make them renounce their creed. * * *

Every zoologist will admit that between the first creation and the final extinction of any one of the five oolitic mammalia now known, there were many successive generations; and, if the geographical range of each species was limited (which we have no right to assume), still there must have been several hundred individuals in each generation, and probably, when the species reached its maximum, several thousands. When, therefore, we encounter for the first time, in 1854, two or three jaws of a spalacotherium in the purbeck limestone after countless specimens of mollusca and crustacea, and hundreds of insects, fish, and reptiles had been previously collected from the same beds, we are not simply taught that these individual quadrupeds flourished at the era in question, but that thousands, perhaps hundreds of thousands, of the same species peopled the land without leaving behind them any trace of their existence, whether in the shape of fossil bones or footprints; or, if they left any traces, these have eluded a long and most persevering search."

Still more to the point is the following, (pp. 401, 402:) "Before the earliest date above mentioned (1844), it was common to hear geologists insisting on the non-existence of vertebrate animals of a higher grade than fishes in the coal, or in any rocks older than the permian. Even now it may be said that we have scarcely made any progress in obtaining a knowledge of the terrestrial fauna of the coal, since the reptiles above enumerated seem to have been all amphibious. Negative evidence should have its due weight in palæontological reasonings and speculations; but we are as yet quite unable to appreciate its value. In the United States about five millions of tons of native coal are annually extracted from the coal-measures, yet no fossil insect has yet been met with in the carboniferous rocks of North America. Ought we then to conclude that at the period of the coal, insects were unrepresented in the forests of the western world? In like manner, no land-shell, no helix, bulimus, pupa, or clausilia, nor any aquatic pulmoniferous mollusk, such as limneus or planorbis, is recorded to have come from the coal of Europe, worked for centuries before America was discovered, and now quarried on so enormous a scale. Can we infer that land-shells were not called into existence in European latitudes until after the carboniferous period?

"The theory of progressive development would account readily for the absence of chelonian and saurian reptiles, or of birds and mammals, from the coal-measures, because the condition of the planet is supposed to have been too immature and unsettled to permit creatures enjoying a higher development than batrachians to find a fit domicile therein. But this same theory leaves the scarcity of the invertebrata, or the entire absence of many important classes of them, wholly unexplained. When we generalize upon this subject, we must not forget that the eighteen or twenty

individual insects and land-shells met with in the coal (and most of these very recently found) are scarcely double the number of the carboniferous reptiles which have been established within the last ten years on the evidence of bones and footprints. Yet our opportunities of examining strata formed in close connection with ancient land exceed in this case all that we enjoy in regard to any other formations, whether primary, secondary, or tertiary. We have ransacked hundreds of soils replete with the fossil roots of trees; have dug out hundreds of erect trunks and stumps, which stood in the position in which they grew; have broken up myriads of cubic feet of fuel still retaining its vegetable structure, and, after all, we continue almost as much in the dark respecting the invertebrate air-breathers of this epoch as if the coal had been thrown down in mid-ocean.

"The age of the planet, or its unprepared state to serve as a dwelling-place for organized beings, cannot explain the enigma, because we know that while the land supported a luxuriant vegetation, the contemporaneous seas swarmed with life—with articulata, mollusca, radiata, and fishes. We must, therefore, collect more facts, if we expect to solve a problem, which, in the present state of science, cannot but excite our wonder; and we must remember how much the conditions of this problem have varied within the last ten years. Meanwhile let us be content to impute the scantiness of our data chiefly to our want of skill as collectors and interpreters, but partly also to our ignorance of the laws which govern the fossilization of land-animals, whether of high or low degree."

Here, then, we have a satisfactory explanation why the remains of existing species are not found mixed up in greater proportion with those of extinct ones. We say in greater proportion, for they *are* found mixed with them to no inconsiderable extent. What Professor H. here calls "a few exceptions," and (p. 55), "a few hundred species, most of sea shells, occurring in the uppermost rocks," he elsewhere (p. 62) calls "several hundred species of animals, that were created long before man, as their remains found in the tertiary strata show." But even if none had been found, it would not prove that there were none, but only that our researches had not yet been sufficiently extensive to meet with them. We might further illustrate this point by reference to the metamorphic theory, and the theory of specific centres of creation, but we think we have said enough upon it already.

If what has been said applies to animals, for a stronger reason does it apply to plants, for they could leave no *tracks* behind them to testify of their existence; yet we know that they must have existed before any animals were created. Professor H. himself affirms (p. 267) "the existence of the carnivorous and herbivorous races in all ages and in about the same relative numbers."

Now the herbivorous animals must have been created before the carnivorous, and long enough before to have had time to get their growth and to multiply to some extent, otherwise the carnivorous must have speedily died of starvation. For the same reason, vegetables must have been created before the herbivorous animals, or these latter would have soon gone the way of the carnivorous. It is true these vegetables might have been only fucoids, had we not been told expressly that flowering and seed-bearing plants were created on the third day. Starting with such information, however, we find no difficulty in accounting for the comparative rarity of flowering plants in the earlier formations; these formations having been for the most part marine ones, we should expect their fossil vegetation would be for the most part seaweed. Professor H., however, has admitted (pp. 312–313), that "all the great classes of organic beings, vegetable and animal, are found nearly at the earliest epoch, and continue through the entire series of rocks." And again (p. 316), "Therefore we find an increase and development of flowering plants and vertebral animals. And yet, from the begining, all the great classes seem to have existed, so that the changes have been only in the *proportion* of the more and less perfect at different periods."

We have now, we think, answered, fairly and fully, all the objections of Professor H., and have shown that some of them, properly viewed, are arguments on our side.

We shall now proceed to state some of the objections to the theory advocated by him,—the theory of natural days of twenty-four hours, with an indefinite period intervening between the original creative act and the subsequent six days' work. One or the other of these theories, Professor H. admits, we must adopt; whatever, therefore, weakens the one, goes to strengthen the other.

Our first objection, then, to this theory is, that it puts a forced construction upon the connecting particle at the beginning of Gen. i. 2, in order to make it say, what it does not say, that the earth instead of having been created *tohu va bohu*, without form and void, had *lapsed* into that condition. Of such lapse no commentator, we are sure, would ever have dreamed, without some exigency outside the record. Professor H. quotes Dathe and the *elder* Rosenmuller (the *younger* would never have made such a blunder) as authority for ascribing to the particle *vau* the signification, "and afterwards," "but afterwards:" we can only say in reply, that there is not the *slightest* warrant for ascribing to it any such signification. As to the *causal* sense attributed to it by Professor Lewis, to make it square with his interpretation of the first verse, it undoubtedly sometimes has such causal sense, but always from some exigency in the sentence itself, not from any extraneous consideration; had the meaning of the writer been what Professor L. supposes, he would have employed the particle *ki*, which would have expressed that meaning unmistakeably.

The notion of a *lapse*, above referred to, is absolutely essential to Professor H.'s theory, as, otherwise, he would have to account for the existence of animals with eyes ages before the existence of light, and petrifactions of rainprints ages before there was any rain upon the earth.

Our next objection to this theory is a geological one. It represents the sacred writer as describing the creation of the existing species of animals on the fifth and sixth days, and within forty-eight hours of the creation of man, and yet the remains of several hundreds of these species are found in the tertiary strata, which were deposited ages before the existence of man on the earth.

Professor H. seems to have felt this difficulty, for he tells us (p. 62), that it is solved by the theory of Dr. John Pye Smith. And what is this theory? According to Professor H. (ibid.,) it is, that the Mosaic account describes, not the creation of the entire earth, but only the "adjusting and furnishing" of that part of it "lying between the Caucasian ridge, the Caspian Sea and Tartary on the north, the Persian and Indian seas on the south, and the high mountain ridges which run at considerable distance on their eastern and western flanks. This region was first, by atmospheric and geological causes of previous operation, under the will of the Almighty, brought into a condition of superficial ruin, or some kind of general disorder, probably by volcanic agency; it was submerged, covered with fogs and clouds, and subsequently elevated, and the atmosphere, by the fourth day, rendered pellucid."

And this is the theory of which Professor H. says (p. 63), "it commends itself to our candid examination"! Verily, we think the old Brahminical theory of the elephant and tortoise* has altogether the advantage of it in grandeur and dignity.

Our last objection to this theory is that it contradicts the eleventh and twelfth verses of the record; "and God said, Let the earth bring forth grass, the herb yielding seed, and the fruit-tree yielding fruit after his kind, whose seed is in itself, upon the earth: and it was so. And the earth brought forth grass, and herb yielding seed after his kind, and the tree yielding fruit, whose seed was in itself, after his kind: and God saw that it was good." Here we have the *process* by which God created the grass, the herb, and the tree. He might undoubtedly have caused them to start into being full formed; but He did not do it. He took an altogether

* Professor Powell has a vignette prefixed to his "Philosophy of Creation," representing the earth resting on the elephant, and the elephant on the tortoise, (who, by the way, seems easily to support the elephant, and not to be at all out of proportion, either,) and the tortoise on a note of interrogation. There is decided *humor* in the gravity with which this note of interrogation stands beneath the tortoise, and in its *suggestive* character. Even as we look, however, we cannot help *repeating* how far more dignified it is than the theory above mentioned. How Dr. John Pye Smith came to broach such a theory is past our comprehension. Had it proceeded from the ubiquitous John Smith, we should not have wondered at it.

different course. His creative word went forth, and the earth received a power which was not in her before, whereby she brought forth grass, herb, tree, by the ordinary gradual process of growth and development. Now, on Professor H.'s theory, all this must have been crowded into the short space of forty-eight hours, that food might be ready for the herbivorous animals that were created on the fifth day. Undoubtedly the process might have been supernaturally quickened; but was it so quickened? That is the question. "Here, then," to use the words of Professor Lewis, "comes up clearly and strongly the point we would wish to present. We must not take words out of their ordinary use, it is said. This is the whole length and strength of the objection. Day means twenty-four hours, and so all minds understand it. But certainly the Hebrew word *yom* does not so inseparably carry with it the conception of a certain unvarying short duration, as the terms of birth and growth here applied to the nutritive and parturitive action of the earth connect themselves with the ideas of a longer duration. If we cannot separate the word day from the thought of twenty-four of our present hours, then, a fortiori atque a fortissimo, do we say, that we cannot separate such a process as the growth of a plant or of a tree through all the regular sequences, such as the germination, the parturition, the growth, the seeding, the ripening, etc., from the conception of a season, to say the least, or many seasons. To admit the process, and yet deny the associated period of duration, or that it had the successive steps, is a war of ideas as well as of language."

Having thus disposed of Professor H.'s objections, and suggested some to him in return which we think he will find more difficult of disposition, we now proceed to state very briefly the nature of the demiurgic days, according to Professor Lewis's view, which is ours, and which, we may add, was also, at least in the germ, that of St. Augustine, as we shall presently see.

These days, then, were long periods; how long, we know not, whether ten years, or ten thousand, or ten million; some of them may have been longer, some shorter, for there is nothing in the record to confine them to the same precise duration. They are called days not because of their particular length, for that, as we have before remarked, is an accidental quality; but on account of their cyclical or periodical nature, which is an essential quality inhering in the very idea of a day. The two antithetical states by which this periodicity is made (see above), are the *ereb* and *boker* of the Hebrew original, the evening and morning, of which the several days were made up. Professor Lewis goes into a somewhat extended disquisition on the meaning of these words, the first of which, like our *even*ing in its etymological meaning, signifies a blending (from the same root with blind) or mingling of objects together in one *even*-surfaced mass, from which no one object

stands out distinct from another; the second, like our day-*break*, signifies a cleaving, a parting, a separating; that is to say, a bringing *out* objects *distinctly* from the *confusion* in which they were *blended;* and, by an easy transition, a bringing *out* the *seen* from the *unseen*, τὰ φαινόμενα from τα νεούμενα, (Heb. xi. 3, in the Greek, compare with Rom. i. 20.)

This was St. Augustine's view. "In his treatise, De Genesi ad Literam, lib. i. ch. 3, he thus asks: 'Quid ergo volunt tres dies transacti sine luminaribus? An ista dierum et noctium enumeratio ad distinctionem valet inter illam naturam quæ non facta est et eas quæ factæ sunt, ut mane nominarentur propter *speciem*, vespera vero propter privationem?' The distinction of morning and evening he thus supposes to be a distinction between a nature not yet made and its subsequent manifestation. Its coming out of the previous *privation* is the morning. It is its receiving *form* and *species* (quo facta *speciosa* atque *formosa* sunt), as the words signify in their philosophical sense. The previous chaotic, or *comparatively* chaotic, condition of each period, is its evening; and this, he says, still rests upon them so far as they are regarded in themselves, or in their possibility of returning, should God permit it, to their original night." (Six Days, pp. 173, 174.)

It now becomes apparent why the evening comes before the morning in the mention of the several days of work, and also why no mention is made of either in connection with the seventh day or sabbath, as, on that day, there was (and is, and will be, for it is not yet over,) no bringing-out of "form" from "privation." Of course, St. Augustine could have had no geological theories to serve; he must, therefore, have been led, we may say driven, to his interpretation by the exigencies of the record itself.

Professor Lewis devotes an entire chapter to the ancient idea of *time-worlds*, in connection with the words *olam*, αἰών, and other kindred Greek and Hebrew terms. We wish we could follow him through it, for it is one of the most interesting in the book; but we have not left ourselves the space for it. We must give, however, from another chapter, his interpretation of Proverbs viii. 22–32, for the *flood* of light it throws upon the whole subject. The following is his translation of the passage, which, it will be seen, departs slightly from the common version: for this he gives his reasons, and they are such, we think, as fully justify him in it.

"The Lord possessed me as his own, or Only-begotten, the Beginning of his ways, before his works of old. From eternity was I anointed, away before the beginning—the beginning of the antiquities of the earth. When there were no chaoses was I born, before there were any deeps swelling with waters,—before the mountains were settled—before the hills *was I born*. When he had not made the earth, or the parts beyond, or the very beginning of the dust of the world, (the star-dust, *hyle*, elemental matter.)

When he prepared the heavens I was there; when he established the skies above; when he made strong the fountains of the deep; when he made a law for the sea; even when he ordained the supports of the earth. I was ever with him like an only child,—*day*—*day*—was I his delight, rejoicing ever before Him. Glad was I in the orb of his earth, but my great joy was with the sons of Adam."

On this he thus comments:

"The first of Genesis seems to have been vividly in the writer's mind, although there is not preserved the same orderly method that there makes the principal feature. The design was different; and the evidence of this gives rise to a feeling of a peculiar kind that does not so much affect us in that more methodical narrative. The design here is to set forth the exceeding antiquity, even the eternity of the Logos. The writer might, perhaps, have expressed this at once, in a single proposition conveyed in abstract terms, had the Hebrew furnished him with any such. He chooses, however, to take a more effective method, by employing vivid conceptions, which, although ever seeming to terminate in the finite, do, in fact, carry us farther towards or into the infinite than any such word as *infinite* itself, or any abstract terms, however logically perfect, could ever have done. We ascend continually and rapidly by a series of the most sublime climaxes, until our idea of what is still above is unutterably exalted by the conception of the immeasurable times and spaces we have left below. We are carried back, and still farther back,—away to the ante-adamic state—away back to the creative period, and into the creative period. And when we are there, there is the same going back, and farther back, as we continually recede from stage to stage, and from period to period, until the mind is lost in the thought of that wholly antemundane state when Wisdom was alone with God, the First-born before all creation. Before the beginning of the antiquities of the earth (*mikkadmei aretz*), the periods that preceded the finishing of the earth, before the mountains were settled, before even the hills or first swelling mounds began to be raised on the terrestrial surface, when there was no sea, no sky, no chaoses, no deeps—was I born. And now we ascend or recede into a region still more immensely remote, 'when he had not made the earth' at all, or the 'spaces abroad beyond the earth,' or 'the very beginning of the dust' (or elementary matter) 'of the world.' We are carried far beyond the time even when the earth was *tohu* and *bohu*, and darkness was upon the face of the waters. * * * And now to think of measuring all this by six solar days of twenty-four hours! Could the writer have had it in his mind? There is, indeed, grandeur in the thought of sudden and rapid exercises of supernatural power; but is it the kind of grandeur which the passage aims to express? We are speaking now merely of its rhetorical

effect, its leading thought, its designed impression. This is not rapidity, nor striking display, nor great strength even, but *antiquity*. The writer is striving to make us feel how old, how very old, this uncreated Wisdom is. He is taxing his utmost powers of language to show how inconceivably ancient, beyond all finite measures, beyond all finite visible things, was the birth of the Logos, the beginning of the ways of God. Let us endeavour then, as far as possible, to receive into our minds this conception of vast antiquities, of antiquities going back of antiquities, not only to the pre-adamite period, but away into it—stage after stage—period after period—beyond the antiquities of the present earth—beyond the running streams—beyond the swelling mountains and even the first rising hills—beyond the dark world of waters—beyond the time when light first shone upon it, before the Spirit first brooded over the abyss—before the chaos, before the material principium; before the very beginning of 'the dust of the world,' the very hyle or elemental matter of the round universe. Can it be that the writer really had in his mind's eye a view which limited all this to a few centuries before his own birth, and, what is still more inconceivable, confined by far the greater and the grander part of these continually expanding antiquities to the space of six solar days? Is it at all consistent with such an intended impression of antiquity, that while the briefest and least important part of this imagery should carry us back three thousand years to the creation of man, all the rest, so labored and so expanded, should take us no farther back of that than six times twenty-four hours? We say nothing of the entire silence respecting the short solar days, which would certainly be very remarkable if the writer had believed in them, or had them in his mind; but we ask again, would not the very supposition cause the whole animated passage to collapse and empty itself of that power which the dullest reader must feel that it possesses? What shows, too, that the writer's mind is on these old pre-adamite periods is the language of the subsequent verses. During these successive stages, Wisdom, or the Logos, was *with* God, delighting in them all. 'I was his delight, *day*, *day*, (*yom*, *yom*,) rejoicing always before him—rejoicing in the *tebel*' (the mundus or *orbis terrarum*), rejoicing in the grand series of constructions through which the earth and heavens were finished; but with the greatest joy—expressed by an intensive plural—when the long periods of creation were terminating at last in the human race. 'My exceeding great joy was with the sons of men.'"

After this eloquent exposition, we think we may consider our interpretation of the record *established*. The several mornings, then, are the successive comings-out of the seen from the unseen, in virtue of new powers successively imparted to nature by the Creator.

Take, for instance, the production of the vegetable and animal

races. "There was a previous nature in earth, whether it had been in operation for twenty-four hours, or twenty-four thousand years. We may compare this to a stream flowing on and having its regular current of law, or regular succession of cause and effect. Into this stream, we may say, there was dropped a new power, supernatural, yet not contra-natural, or unnatural—varying the old flow and raising it to a higher law and a higher energy, yet still in harmony with it. New causations, or new modifications of causation arise, and after the successions and steps required, be they longer or shorter, a world of vegetation is the result of this chain of causation in the one period, and through an analogous, if not similar process, an animal creation arose in another. * * * The first plants *grew*, they were made to grow *in* the earth, and *by* the earth, and *out* of the earth. They were born of the earth: they were carried in her womb during their respective periods of gestation; their embryo or fœtal life was fed from her warmth and moisture; and they afterwards were nurtured and grew up, each to its perfection, on her maternal bosom. They *grew;* and *growth* is the cardinal idea of the word nature." (Six Days, pp. 216–217.) So with the animal races. On the fifth *evening* the word went forth, and lo! a new *morning*—the dawn of the fish, and bird, and reptile races, which the waters "bring forth abundantly." Again, another *evening*, followed by another *morning*—the sixth and last; and the *earth* brings forth the living creature—beast of the field (*wild* beast) after his kind, cattle after their kind, and every creeping thing that creepeth upon the earth. Last of all, MAN appears upon the scene; and here the language of the record changes. Man is not born of the earth, but created from it. At the word of his Creator, he starts into being, full-formed; ready to assert *at once* his "dominion over the fish of the sea, and over the fowl of the air, and over every living thing that moveth upon the earth." Man, therefore, being *created*, not brought forth by the earth, and the whole work of *creation* having ceased with the creation of the *one* man and *one* woman, followed by the *one* sabbath (not yet ended) of rest "from all his work which God created and made," it follows that the alleged *species* of men are in fact only different *varieties* from the *one* original stock. The alleged hybridity of the mulatto races rests upon their asserted tendency to die out unless reinvigorated, from time to time, from the parent stock; but even admitting this tendency, it does not prove their hybridity any more than does the same tendency in the offspring of those clans and communities which have married in and in for several generations. We commend those who doubt the common origin of the different races of men to Dr. Bachman's late reply to Professor Agassiz, and in particular to his remarks upon the Esquimaux tribes; we have not room for them here, or even for an outline of them, and must therefore content ourselves with saying that he

shows conclusively that it would have been impossible for a race new created and set down amid the rigours of an Arctic winter, to have survived a single month. The inference is, that they must have sprung from the inhabitants of more southern climes; and if these, then all the other tribes; for surely we can find none that depart more widely, all things considered, from the prevailing type of the temperate regions, which may be considered the normal type of the species.

Man, then, is a unit; the different races or varieties were all created in the one man and one woman, from whose "one blood" are sprung "all nations of men, for to dwell on all the face of the earth." (Acts xvii. 26.)

With the vegetable and animal races it is otherwise; we are told of the former, and, by parity of reasoning, of the latter, that God created "every plant of the field before it was in the earth, and every herb of the field before it grew; that is, as Professor Lewis explains it in a chapter devoted exclusively to it, He created each plant (and each animal) in its "law, idea, or principle," in its "seminal activities or principia, whose presence the old nature is commanded to acknowledge, and by which, henceforth, the new nature, so far as it can be called a new nature, is to be modified." In other words, He implanted in the earth the *possibilities* of all future vegetable and animal species. We need not suppose, however, that these possibilities all became actualities at once; there is nothing in the record demanding such a supposition. Innumerable possibilities may have lain, each its appointed time, wrapped up in the earth, waiting the requisite chemical, or electric, or other conditions of their development, to call them forth into *phenomenal* existence. In this way we can readily account for the several groups of vegetable and animal species which geology alleges have succeeded each other at immense intervals on the earth. Nor need we suppose these possibilities *yet* all developed; some *may* be still biding their time, and others even now in process of development. If Mr. Cross has succeeded in producing *acari*, (of which, however, we have seen no satisfactory evidence,) there is nothing in it that militates against our interpretation. One thing, indeed, the record does establish, and that is, the *order* of the succession; the vegetable tribes were created first, and this we have shown they must have been, from the very nature of the case, whatever be the order of the *now existing* or *hitherto discovered* fossil remains; next come the air and water races, and after them the land animals;

The diapason closing full on Man.

A word, in conclusion, on the work of the fourth day. It is clear from the nature of the case, that that spherical body which

we call the sun could not have been then first created, and the record asserts no such creation. It only asserts that then first it was made a *luminary* to the earth, to divide between the light and the darkness, and, in connection with the moon, to be "for signs, and for seasons, and for days, and for years." As to the stars, it is not said that they were created on the fourth day; the mention of them is merely parenthetical. What the sun was before it was made a luminary to the earth, we know not: it may have been an opaque body, going through a process of transformation, and in a condition similar to that of the earth when "darkness was upon the face of the deep." That there are such dark bodies among the stars, even now, is believed by some of the most distinguished astronomers, as will be seen by the following, which we take from the Year Book of Facts for 1854, p. 279: "An opinion has been suggested in some cases respecting the probability of an opaque body revolving round a bright one. A more startling hypothesis has been advanced by the illustrious Bessel, viz., that of *the revolution of a star around an invisible or dark body.* This bold idea was suggested to him by certain irregularities which he discovered in the proper motions of the stars Sirius and Procyon. Subsequently, attempts have been made to account for these irregularities by a supposed defect in the instruments with which the observations were made. M. Le Verrier, however, by a profound discussion of the observations of the stars, made at the Royal Observatory of Greenwich, since the middle of the last century, has arrived at a conclusion which, in so far as regards Sirius, affords a complete confirmation of the view of the subject taken by Bessel. This is certainly one of the most remarkable results of modern astronomical investigation."

ART. III.—LA BORDE'S INTRODUCTION TO PHYSIOLOGY.

An Introduction to Physiology, designed for the Use of Students and of the General Reader. By M. LA BORDE, M.D., Professor of Metaphysics, Logic, and Physiology, in the South Carolina College. New York: R. B. Collins. 1855.

IT cannot be doubted that the complicated and wonderful mechanism of the human body is constructed for some definite purpose or purposes. Many thousands of these structures exist, indeed, of which the utility is not in any manner apparent to us. The Root-digger and the Feejee among savages, and in the midst of civilization some classes, idle and dangerous, seem to have been made in vain or worse than in vain: mere cumberers of the earth, they hardly take rank with the reptile or insect, whose being is occupied with busy enjoyment while it lasts. But allowing the full weight of these exceptions, the rule still stands; and we must admit intention and adaptation to be unequivocally displayed in the organized forms tenanted and acted on by the conscious principle within us. It follows clearly enough that we ought to know something of the machinery that serves us, as the engineer is bound to become familiar with the parts of his locomotive or iron horse, and to comprehend the principles upon which these parts are combined and made to work together.

"The proper study of mankind is man;"

not only metaphysically, æsthetically, socially, morally, but physically and physiologically, and should not be neglected in any academical course of education. The mind, the man, emphatically, is sound only in the sound body. We should be taught early in what that soundness consists, and instructed at the very threshold of life to avoid whatever may jar, hurt, disturb, injure, or destroy, and to select the safe, the useful, the beneficial.

Of late this matter has begun to attract in some degree the proper attention, and many elementary works on physiology have been published for the use of schools and the information of the general reader. The modest volume of Professor La Borde, whose title is placed at the head of this article, is among the best that have appeared, and, indeed, seems to us to be altogether and singularly well adapted to the class of readers for whom he has prepared it, and fully worthy of being received as an authoritative text-book in all our higher schools and colleges. Its facts are carefully collated from the most respectable sources, and its reasonings are judicious and prudent. The ultimate end of all such inquiries, hygiene or the promotion and preservation of health, is kept

steadily in view, and the inferences offered and suggested are, with scarcely an exception, such as we must cordially approve.

We do not entertain for a moment the idea that the fullest and most perfect knowledge of the laws of life would induce a general and prudential observance of these laws systematically by the young. We do not even assert that this would be desirable. But, although impulse, imitation, instinctive appetite, desire, passion, will ever be the stirring motives of action, yet the knowledge spoken of would not by any means remain barren of profitable results. Experience, the only teacher whose lessons impress or avail us, will come earlier and at a cheaper rate to the initiated. The remonstrances of both the moral and physical conscience, the experimental appreciation of wrong done by suffering consequently incurred and endured, will be attended to and obeyed more promptly because better understood. Parental and domestic arrangements will be set up in harmony with the requirements of nature and the animal constitution, and all discipline carried on in accordance with the ascertained necessities and exigencies of the varied conditions of our being. Children will be born into and grow up in an improved and improving civilization, and we shall be engaged under favourable auspices in the practical solution of the great question, how we shall gain and retain the promised benefits of progress in cultivation and refinement, without the burden of such evils as have thus far seemed inseparably connected with, if not directly flowing from them.

And what questions can be of so much importance to us as these, of mental and physical hygiene? It is alleged against us as a people, and not without some semblance of truth, that there is already apparent, in the native American, a general or national deterioration of physical beauty and vigour; that the average duration of life is diminishing as compared with that of our European, and especially our British ancestry; that our average weight is decidedly less, from which the impairment of our organic life is inferred; that we have lost something of average stature and of symmetry of frame, being generally shorter than the European man, or, if as tall, stretching up into an ungainly, angular, and awkward height; that our teeth are defective in a degree and to an extent unknown elsewhere; that the proportion of time lost among us by terms of sickness, and particularly of chronic ailments, is greater than in the old world; that infants die in greater numbers, and that insanity is more frequent than in any other race or tribe of men.

It is surely interesting to know whether these allegations are well founded. If we discover that they are urged with any reason, it is still more important to ascertain the causes of such degeneracy, and to remove or correct them and arrest or counteract their injurious tendencies. Knox ascribes these evils in mass to our peculiar

and unprecedented condition of hybridism or intermixture of nations; others have suggested that they arise from our intrusion into a region and climate uncongenial to our original and inherited condition of constitution. We shall find in the unpretending work before us some good grounds for the belief that they depend rather upon our habits, customs, and manner of living, and are therefore susceptible of great alleviation, if not entire abolition; and shall take great comfort in the confident hope that coming generations will adapt themselves more and more to the new world of which we are denizens, and establish more wholesome and normal modes of life.

The briefest and most careless regard to these matters must, we think, convince any one of the advantage, if not of the absolute necessity of an infusion of studies of this sort into our ordinary course of education. The father will better regulate his household, the mother will better feed and clothe her child; the master better govern his slaves; the architect construct better the dwellings we are to inhabit; municipal authorities will superintend to better purpose the health of towns and cities; armies will go better prepared into battle, and sailors more safely and comfortably navigate the seas, for the diffusion of such knowledge.

We are tempted "to improve the opportunity" of impressing upon our readers the value of some of these rules of hygiene by a cursory analysis and running commentary upon some portions of Professor La Borde's book. The first seven chapters contain a condensed but comprehensive exhibit of the received zoological divisions and classification, and a scientific disquisition into the distinctions between organic (or living) and inorganic bodies, between animals and vegetables, and the various orders of ani-animals, vertebrate and invertebrate." This graphic sketch of comparative anatomy is useful and valuable, but by no means necessary to the younger class of readers, who may be repelled by the learned phraseology and depth of the discussion. The same may be said of the ingenious views taken of "the vital properties and principle; the classification of functions, and the mental, vital and nervous principles." In all science there are no topics more obscure or less clearly apprehended; and we would avoid embarrassing with their inextricable difficulties the young and impatient scholar, whose rational curiosity we are anxious first to excite and then to gratify.

As the preface to a book is generally written last, let the first seven chapters of "the introduction" be reserved for perusal until the rest of the volume has been studied, and we will warrant its more ready apprehension and juster estimate.

Commencing, then, with the eighth chapter, we shall find a plain and well prepared account of the special senses, sight, hearing, etc. Throughout the whole of this description, brought up as it is to

the very fullest point of recent discovery, let the reader observe how partial is the most perfect knowledge that we can attain. The beautiful adaptation of the structure of the eye is admired by the optician; but he has not the slightest conception of the nature or mode of the susceptibility of the retina to the impressions of light or the diversity and harmony of colours. The ear is obviously formed to receive the aerial wave with its undulations; but we cannot even conjecture how the auditory nerve is endowed to appreciate the infinitely varied degrees and intensities of sound; tone, melody, concord and discord. The nerves of taste and smell offer nothing in their composition, distribution or arrangement suggestive of their capacity to distinguish odours and flavours. All here is a terra incognita, upon which the first step of successful exploration has not been taken. We have not even a hypothesis or conjecture worthy of a moment's consideration. A lesson is thus taught us upon the very threshold, which should never be forgotten. There are those who reject all mysteries, as they call them; but the very elements of our conscious existence, apprehension, perception, and sensation, are profound and incomphehensible mysteries.

"The conditions of healthy nervous action" are clearly and impressively laid down in the tenth chapter, and the practical conclusions arrived at deserve special notice. They form indeed the basis of all our systems of education, and ought to be engraved upon the mind of every parent and lawgiver: "that everything, under providence, depends upon ourselves; that the enlargement of our faculties is within our own power; that while an ordinary brain may, by judicious management, be elevated to a rank of great respectability, the most highly endowed by nature may sink by neglect or unskilful usage, to a state of perfect imbecitity."

We are all aware how much may be done to improve even the lower classes of animals by proper training. In our asylums and modern institutions, the blind, the deaf and dumb, nay, the very idiots themselves are elevated, by well adapted methods of instruction, into light, activity, and rational attainment. How much room for improvement in all our systems, how much demand for constant effort after progress does this demonstrated possibility imply! How much obligation of unwearied, and diversified appliance of every energy does this unexpected and triumphant success impose upon the philanthropist and the legislator.

The arrangements for locomotion, prehension and other muscular movements are described in chap. xi. While the greater number of the mammalia are handless but forefooted, our nearest neighbour on the scale, the monkey, is gifted, or, shall we say, embarrassed with four imperfect hands, but not a foot proper to stand upon. Man alone has both a well formed foot of exquisite proportions,

and a true hand of the nicest delicacy and most admirable power. Without it, he would still be morally at an infinite elevation above all other tribes of animals, but physically he would enjoy no great superiority to some of them. To its prodigious diversities of application, he is indebted for his regal dominion over them, as well as for everything that belongs to what we call art, and science, and civilization.

"The conditions of muscular action" as discussed by Professor La Borde allow us some occasion of criticism, and a reviewer is "nothing if not critical." We think he has here fallen into some exaggerations, sanctioned, doubtless, by very respectable authority. Forbes, Warren, and a long list of other writers may be adduced to prove the evil of long confinement and uncomfortable sitting in school to young girls; we also denounce the infliction as earnestly as they; but we dissent from their assertion of the almost universal prevalence of spinal distortion from this and other alleged causes. We question the truth, we deny the accuracy of the statements. We think a mistake has been made as to the facts—a mistake easily accounted for perhaps. Nothing is more common among adolescents, probably oftener occurring in girls, but certainly more observed in them than in boys; nothing is more common than a transient impairment of the symmetry of the trunk, from transient habits of action or repose, involving an unequal use and development of the muscles of the different sides of the body. But this is surely something of vastly less import than the permanent distortion of the great pillar of the frame, the bony vertebra. Let a jury of female experts be impannelled—they can easily be obtained at our new colleges of medical ladies—to decide and pronounce upon the condition of the spinal column of American matrons generally; our reputation upon it, they will be found in as large a proportion as in any age of the world and in any race or country, straight and regular, and strong enough for all action, endurance, and function. We do not impugn the weight or propriety of the warning advice given by our author and the physicians whom he quotes. The transient distortions spoken of should be avoided or promptly remedied. This is easily done by a little wild romping or a course of callisthenics, or, best of all, by the practice of balancing weights upon the head; slight and safe objects may be thus carried at first, but after a little while pails of water should be substituted, gradually made heavier, and ticklishly full. The graceful undulations displayed by the Eastern women bearing off in this way their well-filled vessels from the fountain, have always been admired by artists.

The rest of this chapter contains much correct thought forcibly and even eloquently expressed, and the remarks on dancing, gymnastics, and other exercises, travelling, and overwork, are worthy of all commendation. The series of essays upon digestion, nutrition,

food and drinks, deserve and will repay a thoughtful perusal. We are not prepared to assent to all that is laid down here as doctrine, though carefully collated from the best sources. Tables constructed from any man's experience and observation must necessarily be limited; they are therefore apt to lead to premature and doubtful conclusions. The statements given prove indeed the omnivorous capacity of the human animal, and the power of the healthy stomach to digest anything. At every dinner table will be found daily illustrations of the ancient proverb, that "one man's meat is another man's poison." We can hardly bring together any two physicians who will be of accord as to the details of diet either for the healthy or invalids. Nay, the delicate and intelligent valetudinarian will always complain of the capriciousness of his own stomach, and tell you that what agreed with him perfectly yesterday will annoy or injure him to-day. The avoidance on the one hand of monotony and on the other of excess—this is the golden rule. To the latter vice we are almost inevitably led by our national habit of hasty eating. Food not thoroughly masticated cannot be fairly tasted; and the natural satiety, our only true and effective protection from excess, is not permitted to be induced. It is no less strange than true that children have lost the instinct of mastication, and if not carefully watched will universally bolt their food in morsels. Every parent should therefore take care to teach the little animal for whose wellbeing he is responsible, how to break up what he eats before swallowing it. Both the teeth and the stomach are benefitted by this trituration and gestation, and the subsequent digestion and assimilation of the nourishment received are rendered comparatively easy.

Professor La Borde has scarcely bestowed sufficient attention upon the important topic of cookery, an art or science which has more to do with the physical wellbeing of communities than is generally imagined. Writers on hygiene dwell emphatically enough, and at length, on malaria, moisture, heat, cold, etc., as affecting the public health, but pass lightly over the subject of food and its preparation. Yet, under this head, it is our deliberate belief, will be found the real source of by far the greater part of the peculiar or characteristic ailments of our country. Aided by the vile habit of tobacco-chewing, our vicious dietary has produced the national prevalence of that protean malady called dyspepsia "whose name is legion." The badness of our teeth and the practiced skill of our widely renowned dentists have the same origin. With the greatest abundance and the most unparalleled diversity of material, the American table is the worst, beyond all comparison, in the world. We have no hesitation in saying that it would be greatly better for us as a people to abandon the use of fire for culinary purposes, and level our kitchens to the ground, than to continue to poison generation after generation with masses of half

baked dough in the shape of biscuits, most inappropriately so called—lucus a non lucendo—"twice cooked," as not cooked at all, with other lumpy breadstuffs, leaden and rancidly larded, and heavily sodden hot cakes of uncatalogued variety; and with pies of all berries, and unripe fruits dried in the sun and filled with insect ova; and meats empyreumatically rendered indigestible by frying, soaked in stale fats, salted and smoked to absolute insolubility, and in the same modes deprived of their nutritious qualities in great measure, if not altogether. Better, infinitely better, devour both our meats and vegetables raw, as nature offers them to us.

But on this point our patience has been long exhausted. Much has been said of the propriety of establishing professorships of agriculture in our colleges and schools; for our own part we would greatly prefer to see the preparation of human food made a matter of special consideration by our governments and educational boards, and professors of the culinary art or science duly installed among us and liberally endowed. It is an article of strong faith with us that a staff of able and experienced teachers from the French cuisine would do more to improve the public health than all the hygienic speculators that have ever prosed of sewerage and quarantine, from the time of Hippocrates down to the present era of voluminous and unreadable essays and reports.

As to drinks, it is historically true, that while all agree as to the excellent virtues of water, no nation or people ever confined themselves to it, if they could get anything else. Wine, the fermented juice of the grape, is preferred wherever it is obtainable; bitter infusions; alcoholic and narcotic mixtures; beer, tea, and coffee are universally resorted to. Over a large proportion of the surface of the globe, the water of wells and springs is disagreeable, and often contains in solution matter more or less hurtful as well as unpalatable. River water, except in the wilderness, is apt to be turbid and nauseous. Rain water is generally liable to least objection. When first collected it may be contaminated by matters floating in the atmosphere through which it has fallen, but it soon deposits or works itself clear of them. Within the present half century the use of ice has become a universal luxury; it may be doubted whether it is a safe one in the extent to which it is carried. It is a growing fashion to cool our drinking water with ice even in midwinter.

Our own view of this exciting discussion concerning drinks is in accordance with that of the venerable Haller; fermented beverages we regard as wholesome and desirable, of course denouncing excess here as in all other things. The alcoholic products of distillation we condemn unsparingly, and look upon, in his emphatic phrase, "as poisons and not beverages." Tea and coffee are among the best blessings of a beneficent Providence, and we hope the time is not distant when they will be so abundant and cheap as to be drunk universally, even by the pauper and the slave.

Just at this moment the adulteration of food and drink has engaged the public interest in a degree hitherto unknown. Whatever may be discovered in London and elsewhere, we think there is as yet no reason for any panic in this new world. Our milk and bread, as well as our pepper and mustard, are as yet unsophisticated. The first may be diluted; but it is with water from the nearest pump. Our loaf will be found to consist of such flour as the baker can buy cheapest. If our meats are, as some affirm, occasionally in an unhealthy state when killed for market, it is to be noted that our butchers, who feed on the same lean cattle and measly pork as they offer us for sale, are proverbially and almost universally florid and corpulent, stout and athletic.

With regard to the sophistication of wines, we confess ourselves somewhat indifferent; not indeed to the actual qualities of the fluids thus prepared, be it understood, but to the question so hotly and angrily argued, whether they are natural or artificial. If the expressed juice of apples or pears, of elderberries or turnips, can be made by any dexterous appliances of art to acquire the exquisite flavour and sparkling pungency of champaigne, we honour the skill and willingly reward the industry of the manipulator. If an agreeable liquor of amber hue and lustrous transparency be concocted, of whatever material, that shall be made to resemble in delicious odour, and flavour, and cordial quality the pale sherry of Spain, we will swallow it as "sack," and be thankful; provided, that is, in both cases, the imitation of the grape-juice be effected by innocent combinations, and without the deleterious admixture of positively injurious ingredients.

Porters and ales are prepared on a large scale, we are told, with virulent poisons. But if these be sufficiently diluted, we suggest, with some timidity and reserve, there may still be no danger.

Every housekeeper knows the value of the almond and its essence as a flavouring addition to her puddings, custards and ices; but she also knows, or ought to know, that the prussic acid, which she employs thus familiarly, is, when concentrated, the promptest and most certain poison in existence. She should be aware, too, that such concentration may occur accidentally, as was terribly and fatally proved in the manufacture of the cordial "Noyau," by an experienced Parisian confectioner.

In the valuable chapter on respiration, our author has ventured —we admire his daring—to comment upon female dress, and has joined in the customary censure of the corset. We know no subject on which the tendency to exaggeration has run riot so widely as here. We do not pretend to any very nice acquaintance with these recondite affairs, but we frankly profess our total disbelief of all such stories as Dr. Buchan's. We have frequented dissecting rooms, walked numerous hospitals, and seen thousands of women suffering under the multitudinous maladies to which the patient and

all-enduring sex is liable, but we have never met with a single example of the deformity and distortion from tight lacing so often represented in our physiological picture-books. Old as we are, we still admire a slender waist, and would think Venus herself, as the ancient Greeks did, far more beautiful and irresistible with her cestus than without it. As years advance, the maternal frame needs varied appliances of support, which we would freely accord, leaving the adjustment willingly to the wife and matron herself, as altogether prudent and trustworthy. In savage life, every eye is revolted and disgusted with the obvious want of such arrangements. That some among the gay and thoughtless may carry the fashions adopted so tastefully to an undue point, we doubt not; but the evil soon cures itself without our interference or sage advice. As touching the petticoats, whose multiplication the professor inveighs against, we might remind him that the belles of Holland have always been known as fresh and buxom damsels notwithstanding their wealth of under-garments. But our own dear ladies have settled all that difficulty with their usual adroit readiness. Finding the weight of the articles alluded to, when worn in the numbers requisite to the desired expansion, annoying and burdensome, they have returned promptly to the antique hoop, which gives them diameter without solid mass; and presents a light and airy volume which compels our admiration and distant respect.

Our author surely carries too far his objections against all constraint about the trunk of the body, when he arraigns our modern dandies (should he not rather blame their creators, the tailors?) for wearing pantaloons without suspenders, held up therefore by a certain degree of tightness at the hips. But sailors, whose strength and agility are notorious, abjure suspenders absolutely as a class, and hitch up their trowsers as they climb and run, most characteristically buttoned and buckled tightly. We must not forget, too, that the athletes of old were wont to gird up their loins for the contest, as runners and wrestlers do now; and if a sudden quarrel and fight arise between two of our lower crowd, we shall see them, as an unfailing step of preparation for battle, tie a handkerchief about the waist and get rid of their suspenders, freeing their arms and shoulders from them as an incumbrance.

For the rest we cannot too highly extol what is said here of ventilation and its imperfect conditions, especially in reference to the alleged increase of pulmonary diseases among us. We do not doubt the evil influence of such neglect; but there is something in the history of consumption that lies deeper than this. In the most salubrious, most genial and sunblessed climates, in the most favoured classes, living most hygienically in the best constructed dwellings, and in the freest habits of wholesome exercise in the open air, this terrible malady pursues its ravages with unchecked and extending sway. Yet it is comparatively rare in

some portions of the world where the dark and chilly skies seem most frowning, and where the people crowd together in close frowzy habitations, warmed by stoves and sealed against the admission of all atmospheric currents, as in Iceland, Norway and Russia.

In his chapter upon the skin and its functions, Professor La Borde speaks severely, but not too severely, of our national neglect of ablution. Our English visitors are full of such censures, whose justice we will not deny. They come, however, with rather an ill grace from those who constitute exceptions to as general a rule at home, belonging as they do to an aristocracy among whom the expedients of luxurious refinement are necessary resources for passing time and expending wealth. We intend no defence of bad habits; but it is some explanation to say that here we are all busy working men. In England the working classes are familiarly referred to as "the great unwashed," and stigmatized by Prof. Carpenter, so often quoted by our author, as no less offensive neighbours than negroes on a hot day. Our lowest orders are above any such reproach. We hope the hint so broadly given to our Southern hotel keepers will be well received, and at once acted on, and that no house of any pretension will hereafter be found unprovided with a bathing room for the refreshment of the weary, dusty traveller. We earnestly urge upon the Southern reader the views contained in the twenty-fourth chapter, especially the latter paragraphs, in which the management of our dependent slave population is treated of: it will be found redolent of truth and wisdom. With all our anxiety to do justice to these our subjects, and to govern them kindly and well, it is curious to notice how slowly some negligences are remedied. We would specially allude to the defect of comfort in their lodging and sleeping apartments. They bear crowding, doubtless, and impurity of air, as the venerable Cartwright has proved, far better than the superior races; but they may be injured by too close packing, as emigrants are now in crossing the ocean. They suffer, also, from exposure, their windows being unglazed, so that, to admit light, they must also give entrance to the chilly wind of winter. In our hotels, taverns, and houses of entertainment along the road, servants find scarcely the coarsest shelter. This is a crying evil, and one that demands immediate correction.

We have occupied already so much more space than we intended that we can do no more than merely advert to the interesting and curious collection of facts presented in the twenty-fifth chapter, on the "Periods of life, its duration, vital statistics generally, old age and death."

The appendix contains much fine writing and really valuable information concerning our climate and watering places, our various mineral springs, our remarkable points of scenery, and our

best routes of summer travel at the South. The usual regret is forcibly expressed that so large a proportion of those who leave home turn their faces northwardly, and spend the season on the wrong side of Mason and Dixon's line. Our author does not seem fully aware of the inducements which occasion the current to set so strongly in that direction. We are sorry to say that a familiar acquaintance with both regions, of nearly half a century, enables us to speak with but too definite appreciation of their force. It is between forty and fifty years since our first journey in the Carolinas, and last fall we went over some portions of the same ground. We met again with the same rude entertainment, the same coarse fare, the same neglect of nice cleanliness, the same absence of the commonest conveniences. Milk was often not to be had; the butter was the stale refuse of the New York market. The long-remembered chicken, whose dying screams were ever ringing in our ears, was again and again set upon the soiled table-cloth, in a soiled dish, too tough to be cut up by the dull, greasy knife offered us, too stringy to be eaten, and too deeply sodden in frying with empyreumatic lard to be digested, if he had been susceptible of mastication. The same dingy fluid — uncertain whether tea or coffee, or both, or neither—was poured out for us into the same suspiciously dark blue cup, and flavoured with the same moist brown sugar. We need not say there was no bed; there was scarcely place or shelter for the servants that attended us and others; there was no comfort for either servant or master. In all the long intervening period, no progress, no improvement, or next to none, seemed to have been made. We will not affirm that no exceptions can be found to the general correctness of our description; but we appeal to our fellow tourists whether it is not a fair and unexaggerated one as a picture of fact.

As to railroad travelling, an invalid who seeks change of place by this expeditious mode will have much to endure. In our sparsely settled domain, eligible resting places are "few and far between," and the distances great and fatiguing. We have inquired widely, and believe we are warranted in saying, that there does not run, south of the Potomac, a single "*accommodation train*," properly so called, for passengers only or principally. The traveller must go on with his letters; the mail which transports them will take him along, by day and by night, starting early, stopping casually and at the most absurd hours and post offices, bent merely upon "connecting" and getting over the ground.

We do not wonder at and cannot blame the valetudinarian who with moderate means sets out upon a tour in search of health, if he prefers a region where his removal from place to place is easier and more convenient, his lodging more agreeable, and his food prepared and served up to him in proper and appetizing style. For ourselves, when we are stout and well, we sacrifice to love of

country, and visit the glorious landscapes of our native State and her neighbouring sisters. But though our patriotism is very strong, our digestive organs are very weak, and we are reduced frequently to seek comfort and accommodation such as we cannot find in home travel. When our roads become equally passable, and our hotels equally good, our people will not go abroad for the benefits of change. Such places of resort as Cæsar's Head and Table Rock, the valley of Jocasse and the French Broad or Trelika with its ever varying pictures of mountain and cataract, and its luxurious fountains of warm gushing and sparkling water,—our "terrible and beautiful" Tallulah and Toccoa, will then become objects of attraction to all the world, and richly repay the lover of nature and her admirable works—as Jefferson said with justice of Harper's Ferry—for a voyage across the wide Atlantic.

Finally, we will repeat our earnest wish that the studies to which Professor La Borde's well written volume modestly offers itself as an "Introduction," may soon become a fixed portion of the educational course at all our schools and colleges, and our belief that the work itself will be found unexceptionable as a text-book for the use of all classes of learners.

Art. IV.—SLAVERY AND FREEDOM.

Sociology for the South; or, the Failure of Free Society. By George Fitzhugh. Richmond, Va.: A. Morris, Publisher. 1854. 1 vol. 12mo.

The Science of Society, No. 1. *The True Constitution of Government in the Sovereignty of the Individual, as the Final Development of Protestantism, Democracy, and Socialism.* Third edition.—*The Science of Society, No.* 2. *Cost the Limit of Price: a Scientific Measure of Honesty in Trade, as one of the Fundamental Principles of the Social Problem.* By Stephen Pearl Andrews. Third edition. New York: Published by T. L. Nichols, 333 Broadway. 1854. 1 vol. 12mo.

Notes and Narratives of a Six Years' Mission principally among the Dens of London. By R. W. Vanderkiste, late London City Missionary. (Third edition 3,000.) London: Jas. Nisbet & Co., 21 Berners street. Hamilton & Adams, Paternoster Row. 1853. 1 vol. 16mo.

The Social Condition and Education of the People in England and Europe; showing the results of Primary Schools, and the Division of Landed Property in Foreign Countries. By

JOSEPH KAY, Esq., M. A. of Trinity College, Cambridge, Barrister at Law, and late Travelling Bachelor of the University of Cambridge. In 2 vols. London: Longman, Brown, Green & Longmans, Paternoster Row. 1850. 12mo.

Hints toward Reforms: in Lectures, Addresses, and other Writings. By HORACE GREELEY. New York: Harper & Brothers, 82 Cliff street. 1850. 1 vol. 12mo.

Histoire de la Classe Ouvriere, depuis l'Esclave jusqu'au Proletaire de nos Jours, precedee d'une Dedicace aux Travailleurs. Par ROBERT (DU VAR), ex-Professeur de Philosophie, Membre de l'Institut Historique. Paris: chez Michel, editeur. 1847–1850. 4 vols. 8vo.

Principles of Political Economy, with some of their Applications to Social Philosophy. By JOHN STUART MILL. In 2 vols. London: John W. Parker, West Strand. 1848. 8vo.

OUR rubric is a long one, but it was a more difficult task to trim it down to its actual limits than it would have been to have extended it to an indefinite length, so numerous and varied have been the publications, English, French, and American, which have been devoted to the consideration of the great and absorbing question of the day—the normal condition of the labouring classes. The French stated the problem under the designation of l'Organisation du Travail: Carlyle and other English writers took it up under the name of the Condition-of-England Question: but as the distempers of the time became more general and acute, the circle of discussion enlarged till it embraced the whole constitution of society, in which form it has traversed the Atlantic and passed to the United States, manifesting in our Northern cities a decided inclination to a socialistic solution. Our country might seem sufficiently removed from the evils incident to older communities to dispense, for centuries to come, with the practical consideration of those momentous enigmas which have been agitating the nations of Europe during recent years; but the fact is otherwise. The maladies and corruption of the societies of the old world are already sensibly and painfully experienced at the North, and have occasioned as wild an enthusiasm for projects of chimerical reform as has prevailed abroad. The wide spread miseries and starvation which ravaged New York during the winter of 1854–'5, and which must recur in a milder or bitterer form in succeeding winters—the horrible revelations of Mayor Wood's administration, and a thousand other evidences which swarm in the newspapers—have proved that the cities of the United States were not exempt from those social perils which have exercised the solicitude and stimulated the investigations of Europe.

At the South no such wretched experience has demonstrated the sympathetic affinities of the communities of modern christen-

dom—no such dangers are yet apprehended, nor can they readily occur whilst the system of slavery is maintained and appreciated. But that institution has been so acrimoniously assailed by sectional jealousies; it has been so bitterly calumniated by rabid fanaticism, and the local animosity has expanded into such world-wide hostility, that it has been rendered imperatively necessary to undertake the defence of the social organization of the South against the clamours of a world languishing and decaying under the corrosion of its own social leprosies. In the process of this defence, and for the purpose of fortifying our position, we have been compelled to examine minutely and profoundly the principles and consequences of slavery, the principles on which it is founded and by which it is justified, and the consequences to the social constitution and to the moral character of the society where it exists. This investigation has removed many prejudices, imbibed by Southern minds unsuspiciously from those whose views were founded on an entirely dissimilar social order; it has fully justified the institution to their reason and to their consciences. But it has achieved infinitely more than this. As the enemies of the South were not satisfied with the justification presented, but renewed their clamours with greater virulence in consequence of this refutation of their original charges, the South has been led to push its inquiries further than it would otherwise have been tempted to do, and to contrast the principles and practices, the tranquillity and good order of slave communities with the dogmas and results of the boasted freedom of labour, and with the discontents and disorders of free societies. With the continued prosecution of this inquiry, it has become apparent that the hostility to slavery in Europe and at the North is intimately connected with the question of the so called organization of labour—that is, one branch, though a neglected and misconstrued department of that question—and that the full appreciation and justification of slavery, as well as the irrefragable confutation of its adversaries, must repose upon the complete determination of the conditions actual, possible, expedient, or desirable, of labour, in different stages of social growth and development. Thus, even the South becomes directly and intimately concerned in the discussion of those questions of social reform, which have elsewhere produced so many vain reveries and such general consternation.

The question of labour obviously lies at the base of all social organization, and the mode of its solution necessarily determines the characteristics of each particular phase of society. It is the most general aspect under which different societies can be compared, as it is the most pervading and operative element in their special constitution. Accordingly, the more rigourously we press our investigations into the characteristic differences of dissimilar communities, the more forcibly are we impelled to the consideration

of this problem, and of the many subordinate topics dependent upon it. Manifest as is the correctness of this assertion, it has only been very recently—subsequent to, and perhaps in consequence of the publication of Mrs. Stowe's notorious fiction—that the advocates of slavery have contemplated that institution so earnestly or so comprehensively as to attain to the full recognition of this truth. Among the first in the order of time, as among the first in acute penetration and ingenuity, has been Mr. Fitzhugh, of Virginia, in the piquant work which heads our long catalogue. Had he been content with stating and developing the few topics on which his real argument revolves, instead of deviating into all manner of unnecessary disquisitions and extravagant heresies, the cogency of his defence of slavery would have been more apparent and of more general service. The book is able and sagacious, but the ability and the sagacity are exerted as often in a wrong as in a right direction. His objections to political economy are not sufficiently precise in themselves, nor sufficiently developed, explained or limited, nor so closely connected with his main thesis, as to prove either acceptable or entirely intelligible. That the truth of political economy is involved in the decision of the slavery question, is undeniable; but the implication is only partial, as there may be an opportunity of showing.

The same warfare which is waged against this science by Mr. Fitzhugh is more appropriately proclaimed and more energetically conducted by Mr. Andrews in his wild and utopian, but certainly acute treatise on the science of government. Mr. Andrews has recently acquired for himself a most unenviable notoriety by his connection with the Free Love Institute of New York, and by his anti-matrimonial speculations and practices. These peculiarities of his scheme of reform are too offensive to be noticed without an absolute necessity, and will be referred to only so far as may be necessary to exhibit the demoralizing character of the doctrines with which abolitionism is connected, or in which it eventuates. We shall, for the sake of decency and our own self-respect, endeavour to regard his system only in its theoretical aspects, when we have occasion to allude to it.

Mr. Andrews, without professing or acknowledging himself to be a socialist, is an offshoot from the school of Fourier; and, without trusting himself wholly to the dreamy projects of the socialistic reformers, is anxious to realize their aims, and to alleviate the misery, and discord, and penury which have already fastened on the Northern States of this Union, as well as on Europe, by borrowing many tenets from the socialists, and especially from Proudhon, whom he can scarcely have read, but whose views he has partially obtained from some indirect source. He protests, in the strongest and most earnest language, against the practices and usages of free communities, exposes the dangerous fallacies which

are involved in their principles of action, and notes the fatal results which have already flowed and are daily flowing from that much lauded civilization which affects to sit in judgment upon slave societies, and to condemn their alleged iniquities. Whether the remedial measures proposed by Mr. Andrews are practicable, or could prove effectual, are points which we do not intend to examine here; though the experiment already made by him for the abrogation of the marriage contract affords no favourable omen. We are certainly not inclined to believe that the bite of the black serpent can be cured by augmenting the dose of the poison, nor that the evils of a licentious and self-willed procedure can be redressed by the removal of all restrictions. But we notice this book on the present occasion as a valid testimony to the unsoundness of the social organization at the North, and as a negation of the alleged blessings and excellences of that system of labour which is pretended to be exclusively just, righteous and prudent—a negation, carrying greater weight with it as it is uttered from the midst of the happy society where free labour is enforced under the most favourable circumstances, by an author having no partialities, but the utmost aversion to slavery. The work of Mr. Andrews has been summoned before the bar of criticism, not for its theories, but for its testimony—not for its schemes of reform, but for its exhibition of the necessity for reform. It is true, that even in its wildest reveries, it is often suggestive of the true conditions of any adequate alleviation of the miseries occasioned by the inauspicious conjunction of free labour and free competition; and that it points out with considerable felicity, the consequences of abusing the doctrines of political economy, in the manner in which they have been abused by their exclusive and illiberal application in the free communities of Europe and of the United States. But these are not the topics to which attention must be principally directed on the present occasion; nor is it any prominent purpose of this essay to determine, whether the received doctrines of political economy are fallacious in themselves, or only in the customary mode of their practical acceptance. We have no doubt that the precepts of this science have been perverted frequently in their application; and that their import, as well as their use, must be rigidly limited to their appropriate sphere, before existing errors and existing social maladies can be corrected; but the determination of these questions, and of those which are inseparably connected with them, would require a more extensive and methodical examination than could be suitably incorporated with the discussion contemplated by us.

The introduction of Mr. Greeley's Hints Toward Reforms into our capitulary has been dictated by the same motives which induced the insertion of the title of Mr. Andrews's book. There is infinitely less earnestness, less sincerity, and less depth in the diffuse and

disorderly speculations of the well-known editor of the Tribune, than in the brief treatise on the science of government. There is also less method, consistency, and point; but there is a more practical and common-sense appreciation of the requirements and possibilities of the times—if we may speak of degrees of practicability in projects which are all impracticable. Mr. Greeley is more consciously and deliberately a communist than Mr. Andrews; but, if he can be received as a credible witness, his position may lend authority to his testimony, which agrees in all important respects with that rendered by Mr. Andrews.

Here, then, are two witnesses, both natives of the enlightened North, both hostile to slavery, both favourable to the widest dissemination of liberty, both cognizant or professing to be cognizant of the condition of the labouring classes in the Northern and North-western States of the Union, both resident in the free States, both occupied with the study of the social condition of the free population there, both engaged in devising and popularizing patent methods of reform, who both attest, so far as their observation extends, the pernicious accompaniments of the existing free society. Their evidence, so far as it goes, explicitly confirms Mr. Fitzhugh's bold assertion of the failure of free society. Mr. Andrews is not a philosopher, and Mr. Greeley is neither a great man nor the shadow of a great man; he is only one of those presumptuous unfortunates, who, like the silly Malvolio, have had greatness thrust upon him by the blind accidents of life; but both witnesses occupy positions, as the representatives of active social tendencies, which render their evidence even more valuable than the depositions of a great man would be. Like speaking trumpets, however empty the brass may be, they communicate to others sounds which, without their aid would be inaudible—and they only utter in a larger volume the breath that has been blown into them. Both acknowledge the ravages of a deep-seated cancer in the bosom of those free communities whose civilization they nevertheless extol, and the necessity of a complete reform; while neither the disease nor the need of a remedy has been as yet detected by any actual experience in the Southern or slaveholding States. Moreover, the scenes exhibited in New York, and delineated by the infamous New York literature—the want, the starvation, the destitution, the distress, the turbulent discontent of the poor of that great Babylon, the forced charities and consternation of the rich, the disciplined lawlessness of the city lazzaroni, the systematic frauds of speculating sharpers, give additional weight to these testimonies, and should convince the abolitionists of the North and of Europe, of the rottenness of that adored system, and of the greater peace, security, and happiness due to the slave institutions of the South.

To the documents which reveal the unsoundness of the free labour system in the Northern States, and demonstrate the neces-

sity of some early modification of the system, or the certainty of speedy ruin, we have adjoined the titles of two English and one French production, which furnish abundant and valuable indications of the condition, to which the industrial classes of Great Britain and of other European nations have been reduced by the continued and energetic operation of that system, which claims for itself the credit of being alone Christian, alone natural, alone just, and alone politic. If Christianity, or nature, or justice, or policy, separately or concurrently, prescribed a mode of social organization productive of such effects as are recorded in these authoritative volumes, there would be reason to suspect the truth of those interpretations of these regulating principles of action which had seemed to sanction usages eventuating in such calamitous results. The existence of the miseries of those free societies is abundantly demonstrated in the works mentioned by us, and in many others of equal authority, entering into more minute details or giving more extended information. That they are accompaniments of free labor and free competition, is indisputable; that they are consequences of such freedom has been asserted by many of their own ablest sociological writers, from some of whom Mr. Fitzhugh has quoted testimonies to this effect. But that they are the consequences of a particular system prescribed by Christianity, or nature, or justice, or sound policy, is by no means equally apparent. The asseveration of such a connection, or rather the claim of such a sanction for the free labour system, is an arrogant and vain presumption. It has been assumed without authority, and in advance of investigation. The question may be legitimately propounded—and it is one which must now be asked, and which imperatively demands a truthful answer, after sufficient inquiry and reflection—what system is prescribed or suggested for the organization of labour, or for the relation between the employers and the employees, by Christianity, and by nature, and by justice, and by permanent expediency? or whether there is any particular system so prescribed or suggested universally, at all times and under all circumstances? It is only the most absurd prejudice and self-conceit which can suppose that an answer has been already rendered in favour of the free labour system, when these questions have never been soberly investigated, nor even gravely proposed hitherto. The necessities and anxieties of the present times are only now beginning to give them distinct form and prominence. The consideration of these fundamental problems has only recently attracted the serious attention of thinking men; and so far as any reply has been rendered, it, as well as the collected evidence of facts, is adverse to the pretensions of the advocates of exclusive free labour, and has justified the representations of the apologists of slavery, even if it has shown little favour to the system of slavery itself. These great questions, cardinal points

in the determination of the urgent problem of the organization of labour, are only now clearly proposed; they are not yet solved. We may anticipate the solution, if we are desirous of imitating that procedure of our adversaries which we condemn; but the careful collection and diligent criticism of facts, accompanied with a cautious generalization of their significances, can alone establish such conclusions as will be perfectly satisfactory to unprejudiced minds, and beyond the reach of cavil. A new political philosophy, sounder, broader, more catholic, less calculated to run into excesses in practice or extravagances in theory, than any previous type of such speculation, will be the result. Whatever vagaries may be exhibited by the preliminary tentatives of this sort, should not preclude them from being properly regarded as the commencement of that more sedate and earnest spirit of inquiry, which is springing from the discords, the discontents, the distresses, and the requirements of the times.

Towards the formation of such inductions the works of the Rev. Mr. Vanderkiste and of Mr. Kay, and the numerous other publications of a similar character which have been recently issued in England and France, may be of essential service. They furnish us with facts; they may supply us with valuable suggestions. They reveal a condition of things in the bosom of Christian and civilized communities, boasting of their wealth, their prosperity and their advancement; thankful, like the Pharisee, that they are not as other men are, which disproves all their boasts, renders nugatory their accusations against societies differently constituted from themselves, and exhibits an internal rottenness and disease, equally amazing and hopeless. The testimonies which they give are not the heated declamations of partisans, anxious to maintain a theory or to found a sect, but the protracted observations of sober-minded men, specially delegated to the discharge of duties which enable them to see and to judge of the actual progress and corrosion of the ulcers eating into the vitals of the free societies of Europe. We would willingly have added Mayhew's London Labour and the London Poor to our rubric, but it was one of the few victims to be regretted among the number of unlamented books consumed in the grand holocaust of the Harpers some time ago. Moreover, as our rubric is designed rather as an index of the topics at present contemplated by us, and of the prominence which they are acquiring in the estimation of thinking men in different countries, than for direct consideration, the labours of Messrs. Vanderkiste and Kay, and Robert (du Var), the socialist historian of the industrial classes, may suffice as specimens of large confraternities, and will certainly be adequate to illustrate the sad condition of the labourer and the poor in the chief nations of Europe.

The outrageous denunciations of slavery and slave institutions appear preposterous when uttered from the midst of such free

societies as those whence the complaint of the labourer unable to procure work simultaneously proceeds, declaring in the heart of Paris that the free labour system "strangles the whole class, and would let a man die of starvation on a sack of wheat, or of cold on a bale of wool;" and where such a complaint is left without a denial of its truth, without excuse, and without redress.* It must appear equally preposterous that the divine sanction should be specially and exclusively claimed for any considerable part of the modern system, when it is remembered that under the Jewish theocracy, among the chosen people of God, and in accordance with the legislation of a divinely commissioned lawgiver, the Hebrews were governed by rules of action entirely dissimilar from those now in vogue. If we examine the Mosaic polity and the Jewish practices, we find slavery sanctioned, and usury or interest prohibited. We discover numerous prescriptions intended to direct, regulate and organize the labours of the people; others guarding against the accretion of properties; others preventing too assiduous industry from introducing a frenzied spirit of commercial competition, and a furious lust of gain by appointed days of rest and days of labour, modes of culture, feasts, and years of idleness; by precluding either the extreme subdivision or the extreme accumulation of estates; by restricting the powers, the privileges, and the profits of creditors, by cancelling obligations and restoring alienated property to their original proprietors in the year of jubilee; and by adopting every precaution to prevent the manifestation in the Hebrew community of that mistaken prosperity which is now producing such bitter fruits throughout Europe. We shall not be guilty of the error and delusion into which the Puritans, and Spinoza, and even Bossuet in some measure, fell, of supposing that the Jewish polity is the canon of either political or social organization for all communities; but we simply call attention to the fact that this system, which received the divine approval, is at variance in nearly all points with the system represented to be exclusively true, and universally adopted by the free labour States of Christendom; and that the latter cannot be just, natural, safe, and Christian, if, according to its own doctrine, there is only one form of social combination consonant with religion and right. We do not press one single inch further the discrepance between the Jewish and modern organization of society, but employ it solely as a negative argument to refute the arrogant pretensions, and neutralize the vain malignity of those who introduce the presumption of the exclusive righteousness of the free labour system as a ground for the denunciation of slavery and the calumniation of slave communities.

* "Il (l'argent) nous jugule tous; il laisserait mourir un homme de faim sur un sac de ble, ou de froid sur un vallot de laine: cette anomalie n'est que trop exacte." Cited by the Journal des Economistes, No. 97, 15 Avril, 1849, p. 104.

We do not go so far as Mr. Fitzhugh, and maintain that nothing but slavery can be right. We only infer from the above premises that it is not proved to be necessarily wrong by any superior propriety in the system so blindly, fanatically, and fatally pursued by its assailants. To what results that system has attained may be learned partially from Messrs. Vanderkiste and Kay, and generally from the contemporary literature of England, France, and Germany, and from the public documents of those countries.

We have appended to our catalogue the well known and almost classical work of the younger Mill on political economy, as being the highest received standard of the matured views of the political economists in regard to the conditions and relations appropriate to the labouring classes in modern times, and in regard to the supposed benefits and disadvantages of the prevalent social organization of free labour communities. Mr. Mill is by no means insensible to the evils which are preying upon such societies; nor is he indifferent to their alleviation or cure; but, whilst inclining perceptibly towards novel measures of reform, he fully identifies himself with the followers of Adam Smith, and with the general doctrines of ordinary political economy. He may, therefore, be safely consulted as the most distinguished representative of the advanced theories of the science entertained in England and the European continent; and his name thus completes the series of types of speculation in regard to the labour question, which it is important to keep in view in such discussions as the present.

This list, we acknowledge, is imperfect and fragmentary. We have not included all the innumerable shades of communism and socialism, which have each their separate corps of enthusiastic adherents in France and in other parts of Europe, as well as in the Northern States; but we have produced a list of authors indicating a sufficient variety of differences of opinion, relative to the solution of the great fundamental problem of the day, to enable the diligent inquirer to collect the most important facts requisite for the examination and contrast of the principal conflicting views of labour reform. By each of these works a much wider range of investigation is suggested than is pursued by the authors themselves; and with their assistance we may readily proceed from the consideration of those opinions which lately obtained an uncontested ascendancy in the chief industrial nations of the globe, to the modifications of those opinions which have been produced by contemporaneous social disorders, and which have been proposed by those most hostile to slavery, in order to attain, in an inferior degree, those ends which are easily and spontaneously achieved by the action of slavery itself. We are thus enabled to trace the labour question in its leading outlines, and in its most distinctive forms, actual or theoretical; to compare the free-labour system, its principles, and its consequences, with the grounds and effects of the

slavery system; and at the same time to contrast with both the manifold, dreamy forms of socialism, which rebel against the existing constitution of free labour communities, and repudiate slavery while introducing its most characteristic features, and only ineffectually endeavouring to realize a part of its benefits.

This comparison and contrast is partially and hurriedly drawn by Mr. Fizhugh; but he has not sufficiently concentrated his attention on the leading topics of his subject, and he has not avoided with anything like sufficient care, the consideration of matters wholly irrelevant or but slightly connected with his main purpose. He suggests a great deal more than he establishes. This is the chief value of his bold and novel essay; and this value is so considerable that it outweighs all his heresies, and renders it incumbent upon every one who would investigate these matters, especially upon every Southern man, to master the positions assumed, to determine the conditions of their truth, and the range of their application, and to eliminate the doubtful or untenable propositions.

It is not our design to criticize Mr. Fitzhugh's Sociology of the South. Neither is it our intention to traverse the same ground and to plough in the same furrows which have been turned by him. We are more desirous of co-operating in his endeavour to defend and to do justice to the South, than to repeat, remodel, or prune his doctrines. We shall pursue an independent course, though following the same general direction, and guided by the same stars. In accordance with this purpose, and as an intimation of it, we have introduced many dissimilar works into our caption, but have assigned the first place, or post of honour, to him.

We are by no means singular in regarding the labour question as distinctly the most important practical question of the day. The character of recent legislation throughout the world, the incidents of late political convulsions, the tenor of the current literature, the direction pursued by the popular thought, the devices public and private, which have been adopted for the amelioration of society, the tendencies of common life, concur with the explicit declarations of authoritative writers in confirming the justice of this view.* Nor can the interest of the South in the speculative and practical determination of the question be considered by any one who considers the fury of modern abolitionism in its true light, as a legitimate consequence of the antagonism between opposing systems of industrial organization.

The relation between the employers and the employed has hitherto assumed, and perhaps can assume, only two pure forms:

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* "La plus importante des questions sociales, d'apres M. Rittinghausen, est sans contredit celle de l'organisation du travail." Journal des Economistes, No. 98, 15 Mai, 1849, p. 201.

the free labour of the hireling and the compulsory labour of the slave. All other arrangements to effect the co-operation of labour and capital are only modifications or amalgamations of these two types, in different proportions. It may be, indeed, suspected that the most offensive features of slavery are always virtually incorporated in the system of free labour, when this is exhibited in its undiluted form, and is carried out to its legitimate consequences, as has latterly been the case in Europe. The works cited at the head of this paper afford abundant evidence to justify the identification of free and slave labour. They prove that, in respect of liberty, for any good or desirable end, individual or social, or political; in respect of nourishment, clothing, comfort, happiness, morality, voluntary action, domestic tranquillity, virtue, and enjoyment, peace of mind, and provision for the future, the condition of the slaves of the South is infinitely superior to that of the mass of the proletaires of Europe, or of the mercenary poor of the Northern States. Did not the slaves of Mobile propose to contribute to the alleviation of the miseries and starvation of the free labourers of New York? We are not apprized whether the contemplated subscription was actually raised, but no one acquainted with the condition of the negroes at the South can doubt their ability to have rendered the designed assistance.

Nevertheless, as free labour and slave labour are broadly opposed in general estimation—as, moreover, the accompaniments and consequences of the two are widely dissimilar, and eventuate in contrasted social systems, it is desirable to consider them as separate and distinct. It may be expedient at some times and for special purposes to dwell upon their points of contact and resemblance, but to do so always, or on the present occasion, could only conduce to sophistry and confusion. We distinguish, therefore, between them, and regard them as the sole pure forms in which labour has heretofore been organized, except in exceptional instances and limited communities, such as monastic establishments. All other habitual relations between the employers and the employed are intermediate between these extremes, and participate in their nature, approximating sometimes to the one, and sometimes to the other. We may add, that this is true of all the recent projects of social reform promulgated by communists, socialists, Proudhonists, equalitaires, etc., etc. As soon as these contemplate extension into a wider sphere than would be analogous to the conventual institutions of the middle ages, they assume the same intermediate character, with a marked propension to the servile extremity. Between these poles there is an equatorial zone, where the golden mean may be sought, and should be found. But, unfortunately, it has never been reached except in rare instances, and for brief periods of time; and has rather exhibited itself as the happy lot of small classes, than as the general blessing of whole communities.

Moreover, it is essentially a transitory condition, a culminating point, which is reached but for a moment, and is then abandoned forever. Such we conceive to have been the character of the relation between hereditary family servants and the families they served, after serfdom had been extinguished; and yet scarcely a trace of such a relation is now to be detected in England—a country of all others the most tenacious of ancient usages and sentiments. Nor would it be correct to consider this relation as in itself an unalloyed blessing; neither would it be easy to point out any considerable advantages annexed to it, which had not been equally enjoyed by the serfs who preceded them, or which were not now as commonly and in as high a degree experienced by respectable slaves. But the principal objection to even this supposed golden mean is its essentially evanescent character: the extremes are permanent arrangements, though unequally so: the intermediate forms are always verging towards a known end. This end is the want, and misery, and immorality attendant upon labour entirely free, in a population so dense that the instruments of service are uncared for by those whom they serve; and that the boasted liberty enjoyed is the license to be immolated, without notice or regret, beneath the ponderous wheels of the car of Juggernaut, the true emblem of the industrial civilization of free labour States.

Granting, however, what may be safely admitted, that the intermediate forms of labour, in which service and freedom are happily combined, may be most desirable in themselves and under favourable circumstances, it by no means follows that they are always expedient or applicable. The condition of the people, their tastes, pursuits, numbers, cultivation and wants, may necessitate, and must at some time necessitate, a departure from this ideal perfection, to the one side or to the other. A republican government or a constitutional monarchy may be deemed the best type of government, but it is not always possible to establish either the one or the other, nor is the condition of all nations such as to render it in every case desirable. Whatever admissions, then, may be made in favour of the mixed character of labour, do not tend to confirm the alleged exclusive propriety of free labour, nor to condemn the practice of slavery in those countries, where slavery is rendered appropriate by other considerations.

Leaving out of view those relations between employers and labourers, in which there is a combination of the characteristics of freedom and slavery, whether these relations have been exemplified by actual application, or are only contemplated by the schemes of social reformers, we will confine our attention to the two pure forms of labour, their principles and their consequences.

Mr. Mill, impersonating political economy, has no positive arguments to adduce in proof of the absolute and exclusive

righteousness of the free labour system. After a few observations, sometimes acute, usually erroneous, on the effects of slavery, he concludes in not very elegant English, that "more needs not to be said on a cause so completely judged and decided as that of slavery."* Strange delusion! The world is only now seriously addressing itself to the philosophical examination of the question. Hitherto, it has been content to act precipitately under the influence of philanthropic fantasies, and conscious or unconscious pecuniary instincts, and to decide without investigation. Like Mr. Mill, other opponents of slavery sustain their positions almost entirely by broad assertions and blind censures, and negative proofs. They have either unsuccessfully attempted to answer the reasoning of Aristotle in favour of slavery, which has never yet been answered, or they have proceeded on the presumption that it had been already refuted. It still remains, however, firm as a rock, unshaken by the vain assaults continually directed against it, and unaffected by either the success or failure of the arguments addressed by such reasoners as Blackstone and Robert (du Var), to the disorderly, inconclusive, and inconsistent theory of the Roman jurists.

There is, however, one positive argument in support of the freedom of labour pertinaciously reiterated by the Northern fanatics, though not yet hazarded to any great extent under the European monarchies, notwithstanding its European lineage. This is the dogma inserted in the declararion of independence, that all men are born free and equal. Mr. Fitzhugh has so effectually exposed the sophistry and fallacy involved in this celebrated maxim, that it is scarcely necessary to slay the slain again. We would remark, however, that it by no means appears for the first time in that popular document. It was borrowed by the great statesman who drafted that instrument from the then fashionable school of Voltaire and Rousseau. The French encyclopædists had found it in the canonists and in the texts of the Roman law,† where it was not conceived to be inconsistent with either slavery or despotism. The Roman jurists derived the doctrine and the congenerous hypothesis of a state of nature from the Stoic philosophy: and the Stoics were themselves anticipated by the orators and demagogues of Athens during the corruption and decay of that brilliant republic. The principle is, in great measure, just and true, as the development of an imaginary state of nature, itself, however, a pure fiction; but it is an undiluted and pernicious fallacy when applied to the realities of social existence. It is then equally inconsistent with facts, and absurd in speculation. It may be perfectly true when we confine our regards to Adam and Eve,

* Mill, Political Economy, book ii. chap. v., vol. i. p. 298, first English edition.
† Inst. i. Tit. iii. Dig. i. Tit. i. § 4; Tit. v. § 4.

or to those abstract humanities which are supposed to have preceded society, that God created all men free, and that nature made no slaves;* but it is in no respect true when tested by the real evidence of history. The present condition of the free labourers in Europe, and, to some extent, at the North also, proves that there is much more reason in alleging, that the insane appetency for universal and unrestricted freedom necessarily leads back to slavery.

πολλοί, φεύγοντες δεσπότας, ἐλεύθεροι
ὄντες, πάλιν ζητοῦσι τὴν αὐτὴν φάτνην.†

But dismissing the consideration of the solitary and untenable position on which free labour is advocated as an abstract question, and passing to the practical fruits and the history of this type of society, we shall find that the false postulate is even more conclusively proved to be false by the experience of mankind, and by its own dangerous and lamentable results. There is no field of speculation, in which the prudential test, "By their fruits shall ye know them," is more safely and indispensably applicable than in the criticism of social institutions. If freedom and equality be such universal blessings, and so exclusively just under all circumstances, as has been pretended, their effects should certainly be uniformily blessings also, and should manifest their supreme excellence by producing not greater evils, but superior happiness, peace, and comfort in the bosoms of the societies where they prevail. That such consequences have not attended the development of the principle and the extension of the practice in the chief countries of Europe, and in the Northern States, will be acknowledged by every one who has studied the present social aspect of their populations, and is amply established by the authors who furnish us with our text. If entire liberty and perfect equality be such inalienable rights of the labouring and all other classes, they are nevertheless only means for the attainment of the highest practical degree of happiness and wellbeing; and wherever these doctrines are asserted and enforced, the alleged advantages to be acquired by them should be secured to the multitudes who adopt the faith and accept its rites. We may address with peculiar point to the modern advocates of free labour, who have before their eyes the sufferings of the pauperized masses of England, Scotland, Ireland, France, and Germany, the acute remark of the Emperor Tiberius, "Dandos vitæ usus cui vita concederetur,"‡—the fruits of freedom

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* Alcidamas, a pupil of Gorgias, said:—
"ἐλευθέρους ἀφῆκε πάντας Θεός, οὐδένα δοῦλον ἡ φύσις πεποίηκε."
Schol. Rhet. Aristot.
This is the earliest enunciation of the maxim we have met with.

† Eubuli, Incert. Fab. Fragm. xvii. apud Meineke, Fr. Com. Gr. vol. iii. p. 270.

‡ Tacitus, Ann. iv. c. xxx.

should be guaranteed to those to whom freedom is granted. If the freedom of the labourer is in itself such a blessing, as the necessary means to the acquisition of other blessings, it should not be made to defeat its own aims, and to entail greater evils and miseries than those which attend the opposite and reprobated mode of industry. It certainly can be neither a measure of sound policy, nor a just or proper concession to the labouring classes, if it produces, or concurs with other connected influences in producing, want, starvation, misery, and crime. Does the modern, the English, the European, the politico-economical system, the institution of free labour, lead to these results? The experience of contemporary nations, nearly all the authors who have investigated the subject, and the wretched multitudes themselves, assert that such are not merely its tendencies, but its already realized effects. Mr. Fitzhugh maintains the truth of this allegation by citations, easily multiplied, from various and most respectable authors, living in the midst of free labour, partial to it, and as far removed as possible from any pro-slavery proclivities. Out of their own mouths he condemns the eulogists of the freedom of labour, the policy of the countries where it exists, and the system itself. Mr. Greeley and Mr. Andrews propound new and impracticable schemes of social reform, and justify their wild and often demoralizing suggestions by the absolute necessity of some change, of some alleviation for the wretchedness and rottenness which eat like a cancer into the vitals of the free labour communities of the world. M. Robert (du Var) is firmly convinced of the necessity and sufficiency of socialistic preaching and performance. Mr. Kay and Mr. Vanderkiste have no theories to bolster up; the one advises education and moral instruction, with increased comforts; the other a stronger dose of Protestant Christianity, and additional comforts, accompanied with primary education, as a mitigation for the acknowledged evil. The recommendations are admirable, if either the physic could be provided or the patient compelled to swallow it profitably. But neither of these gentlemen informs us how these comforts are to be obtained, nor how either the Christianity or the instruction is to be adequately infused into the whole mass, in a manner compatible with the present order of society, and with the continuance of the freedom and the competition of labour. It is not, however, their purpose or their vocation to devise universal therapeutics; the object of their treatises is simply to recount the facts, to record the frightful existence of evils of all sorts, and to arouse the sympathies and the energetic action of their countrymen in favour of the depraved, degraded, and miserable population. It is not their province to determine what mode of cure should be adopted, or would be efficacious; but only to show the urgent and alarming necessity of a complete cure. For ourselves, we doubt whether there is any balm in Gilead, and still

more whether there is any physician there. Mr. Mill's work, though not designed either as a repertory of facts, or as a theory of social innovation, fully illustrates the dangers and failure which have attended the experiment of free labour united with free competition; and at the same time indicates the necessity, and proposes measures of partial reform.

Mr. Fitzhugh perhaps employs too unguarded language when he nakedly asserts the failure of free society; and he assuredly commits a more grievous error of the same kind in his indiscriminate denunciation of the doctrines of political economy. But, unquestionably, the freedom of labour has failed to produce the blessings ascribed to its operation; and it has aided in occasioning, or, at least, in precipitating, social evils unknown to earlier social organizations, including slavery in the number; and the practical influence of political economy has sanctioned and embittered the wretchedness of the labouring classes, and it has introduced other ills which have escaped notice until they are already beyond the reach of complete remedy.

The desperate condition of those societies where free labour alone is employed, may be easily estimated in its more prominent aspects. We have only to refer to any of the works which serve for our text, and to take their statements of facts, statements which cannot be contested, as they are so amply confirmed by other reliable sources of information. "Human labour," says Mr. Greeley, and he speaks truly in this instance, "is efficient beyond example, but the labouring class is hardly benefited thereby. Houses multiply with extreme rapidity, but the number of the houseless is not diminished. The prolific earth yields larger and larger harvests, as wilds are reclaimed and science is applied to agriculture, but millions pine, and thousands starve for lack of food. Our roads and means of transit are visibly improved from season to season; but our road-makers are no better circumstanced than their grandfathers were. Each year sees the number and value of arable acres increase, while the proportion of those who possess any land in their own right steadily diminishes. Each year produces more and more fuel and cloth, yet witnesses more and more shivering and nakedness. While new inventions and processes are daily rendering material life more smooth and comfortable to the affluent, the number of the destitute, squalid, and miserable is steadily on the increase."*

This is Mr. Greeley's report on the phenomena of free society in the northern part of the United States. The same picture is true in a vastly increased degree of the principal free communities of Europe. But no one would deem this description, or any simi-

* Hints Toward Reforms, p. 180–181. See Fitzhugh, Sociology for the South, chap. ii., pp. 34–79.

lar description applicable to the Southern States, or to other slave-holding countries. Under such circumstances, could anything but the blindness and malice of habitual prejudice and arrogant presumption, dictate those denunciations which have been launched against slavery and slave-owners, by the very persons who experience and acknowledge the evils around them connected with the entire freedom of labour?

Mr. Greeley's delineation is drawn in general terms; the filling up of a part of the details may be borrowed from the account given by the London Illustrated News, of the district of Clerkenwell, in the heart of the great and wealthy metropolis of the commercial world. "Many of our readers are no doubt familiar with the densely peopled, dirty, confused, huddled locality which stretches around the Middlesex Sessions House. Many of them have, we doubt not, been bewildered amid the dingy swamping alleys, crowded with tattered, sodden looking women, and hulking, unwashed men, clustering around the doors of low-browed public houses, or seated by dingy, unwindowed shops, frowzy with piles of dusty, ricketty rubbish, or reeking with the odour of coarse food; lumps of carrion-like meat simmering in greasy pans, and brown crusty-looking morsels of fish, still gluey with the oil in which they had been fried. Many of our readers, we say, have probably congratulated themselves with a cosy, self-satisfied shrug, as they emerged from the odoriferous haunts into the broad thoroughfare, where the shops do not look like dens, nor the passengers ruffians and sluts. In Clerkenwell there is grovelling, starving poverty. In Clerkenwell broods the darkness of utter ignorance. In its lanes and alleys the lowest debauch, the coarsest enjoyment, the most infuriate passions, the most unrestrained vice, roar and riot. The keeper of the 'fence' loves to set up in business there; low public houses abound, where thieves drink and smoke; Jew receivers lurk at corners; brazen, ragged women scream and shout ribald repartees from window to window. The burglar has his crib in Clerkenwell; the pickpocket has his mart; the ragged Irish hodman vegetates in the filth of his three-pair back. It is the locality of dirt, and ignorance, and vice—the recesses whereof are known but to the disguised policeman, as he gropes his way up ricketty staircases towards the tracked house-breaker's den; or the poor, shabby genteel city missionary, as he kneels at midnight by the foul straw of some convulsed and dying outcast." *

Such is the description of the mass of metropolitan heathenism; for, in addition to the disgusting traits of the above portraiture, Mr. Vanderkiste asserts that "heathenism is the poor man's religion in the metropolis," and adduces, as one proof of the declaration, "the

* Illustrated London News, May 22, 1847. Quoted and endorsed by the Rev. Mr. Vanderkiste, late London City Missionary.

astounding statement that in the Island of Jamaica, there were more communicants out of a population of 380,000, than there were in all London with a population, in 1841, of 2,103,279," and the still more astounding statement that the church-going class formed a larger proportion to the whole population "in three of the South Sea islands, Tonga, Habai, and Vavau," than was presented by the ratio of the church accommodations of all sorts in Islington, "the most favoured parish of London." *

For further and more revolting details, or for details in regard to other developments of free society, we must refer to the works of Mr. Vanderkiste and Mr. Kay, and to the numerous other authentic accounts with which the recent literature of Europe is replete. But, before leaving this topic, we would ask whether there is any negro quarter, from Mason and Dixon's line to the Rio del Norte, which could furnish a picture of vice, brutality, and degradation comparable to that drawn from the heart of London? Yet the Five Points of New York, and the pauperized and criminal population which infests our Northern cities, might equal it, according to the showing of their own journals.

In reading such statements as those given above, it should be remembered that they delineate only the actual, obvious, and, we may say, superficial effects of the pauperism of free labour societies. They do not trace the progressive tendency to worse miseries, more hopeless afflictions, more incurable vices, to social disorganization and disintegration, to the physical and moral depravation of the people, to financial ruin, and national decay. Immediate evils occupy the regards of those most deeply concerned in devising measures of relief; ulterior consequences are only vaguely apprehended. The passing hour is the season of work; and it is filled with more cares and anxieties than it can eradicate or console. The future is sought to be avoided; there is neither the time nor the disposition to look it boldly in the face, and to anticipate the curse of its terrible penalties. In communities lying beyond the infernal ring, there are not the same pressing miseries to demand or stimulate inquiry, nor the same fearful opportunities of investigation; and the final results are not there the objects of solicitous study. Indeed, the whole question of the aspect and destiny of free societies would have been passed by with only an occasional glance of commiseration by the people of the South, if the hostility of abolitionism to our institutions had not led Southern men to contrast free with slave labour, and free societies with slave societies; and to recognise the intimate connection of the anti-slavery warfare with the question of the organization of European labour. Yet, though the consideration of the ultimate destinies of free societies has been been thus withdrawn in great measure from

* Vanderkiste: The Dens of London, Introd., p. x., xiv., xii.–xiii.

the circle of speculation, it is evident that the industrial system of Europe and the Northern States, if not speedily arrested and greatly modified, must eventuate, at no distant day, in political and social anarchy and decay, and that permanent, overwhelming, universal ruin must be the result.

This representation of the present and prospective condition of free labour is not calculated to give either weight or propriety to the declamations against slavery; nor is it likely to weaken the confidence of the South in the justice and expediency of the maligned institution. So far, in accordance equally with logic, experience, and good sense, the intemperate fanaticism of the abolitionists has only strengthened the South in its convictions, and confirmed its practices.

The thorough examination of the philosophy of the free labour school—of its heresies and its fallacies, with the exposition of the actual condition of free labour societies and their probable fate, and accompanied with a careful determination of the causes and their effects, would furnish abundant material for a much more copious work than either Mr. Fitzhugh or any of the historians of industry has yet compiled. We can only indicate here the importance of such a treatise, as a necessarily constituent part of the argument in favour of slavery, and also as an essential preparation for the relief of such distempered societies as may still admit of a recovery from their disease. The sole additional aid that we can now render towards the satisfaction of this great desideratum is to note the fact that, as the freedom of the labourer was originally introduced and was subsequently extended chiefly from considerations of pecuniary gain, so it is this same insatiable avidity for gain which has rendered it the instrument of social and national disaster. The seat of the disease lies in the moral, or rather in the immoral character of the commercial and industrial spirit of modern times. It was this spirit which first led to general emancipation; it was this spirit which inspired the clamour for universal freedom; the same motive induced the foolish liberation of the slaves in the West Indies, and the outcry against African slavery; it is the same spirit which has been engaged in cheapening labour till the labourer is starved and depraved, and the accumulations of the capitalist endangered or menaced with impotency.

Is it not a notable result of the blessings of free labour, that the more its freedom has been enlarged, the more it has been released from legal restrictions or deprived of legal protection—the worse has become the condition of the labourer, the more precarious his support, and the more stringent and crushing the pressure of the circumstances—that ever burning circle of fire—by which he is surrounded? It is almost universally admitted, notwithstanding the protest of Mr. Macaulay, and the denial of the partisans of the English school of political economy, that the serf of the feudal

ages was more happily situated than the labouring freeman of to-day. If political economy will transgress the narrow limits which are assigned to it as a specific science, and will meddle with questions which concern much higher interests of society than the augmentation of wealth, distorting facts and perverting instruction to minister to the cupidity of grovelling capitalists, we may regret with Niebuhr that there is not a gallows on which it and its apostles might be gibbetted. We would not indulge in any indiscriminate abuse or repudiation of political economy, but we do reject the application which has been made of its doctrines to the subject of labour as equally false in morals and pernicious in practice.

It is acutely and justly alleged by Mr. Fitzhugh, that political economy is only the reduction to form and system of the industrial usages and tendencies of the age when it appeared; and that Adam Smith was only the prophet of a faith already received and imperfectly practiced. In consequence, political economy sanctified, with the pretensions of science, those views and instincts relative to the question of labour, which for centuries had been struggling for the ascendancy, and which were then beginning to claim supreme dominion over the actions of society. It was the full and final enunciation of a doctrine which had been long but partially entertained. The solution of the labour question presented by political economy was no profound discovery; it was no result of either high moral sentiment or patient and enlightened investigation, but simply the acceptance and canonization of the existing order of human development.

If any other evidence than the aspect of the science itself was requisite to confirm this statement, it is provided by the history of free labour. This is comparatively a recent innovation, a social neoterism. It is not one of the universally and necessarily recurring types of social organization, but, in great measure, a new thing under the sun. The universal and necessary institution is slavery. This has appeared in all ages and in all countries, and apparently refuses to be eradicated from the earth—a strong presumption that it is a natural growth. "In every age and country," says Mr. Hallam, a most unexceptionable witness, "until times comparatively recent, personal servitude appears to have been the lot of a large, perhaps the greater portion of mankind."* The late President Dew furnishes superabundant evidence of the truth of this position; and every man acquainted with the past history and present condition of the world requires no further attestation than his own knowledge. Free labour is, then, the exceptional procedure of some nations in late centuries; the prestige of human experience is adverse to it. What, then, were the motives which, at a very late day, led to its adoption? Was it philanthropy, or a sense of

* Hallam, Middle Ages, ch. ii., pt. ii., vol. i., p. 145, ninth English edition.

duty, a conscientious pursuit of right, a philosophic appreciation of the requirements of a healthy society, or obedience to the dictates of religion? Each of these considerations may have exercised some influence over individual minds, and we must not forget that the Christian Church, from an early period, steadily but cautiously favoured emancipation, originally in consequence of its hostility to paganism and its practices, and latterly in accordance with the impulse already communicated.* But the gradual emancipation was finally completed, not by moral or philosophical considerations, not by ecclesiastical influences or Christian piety, but by that growing sense of pecuniary interest which has dictated the speculations of political economy on the subject, which maintains the arguments of the abolitionists, and still supplies the weapons of their malice. The serfs were liberated by their owners, sometimes from superstitious motives, but principally because it was found more economical to hire than to own labour, when the population had received a considerable increase. Negro slavery was abolished in the first fury of the French Revolution, in compliance with the utopian dreams of the savage reformers of France; it was abolished in the English colonies as a boon to the East India Company. But it was only in very late years that any effectual legislation was adopted. In France, Louis le Hutin and Philippe le Long enfranchised the royal serfs, but either they were unwilling to accept the inestimable gift, or it was ungraciously granted for the sake of increasing the revenue, as they were taxed for their refusal to be made free. In 1779, Louis XVI. liberated the serfs by an ordinance, but only those appertaining to the royal demesne.† In England, limited serfdom still exists among the Bondagers of Northumberland;‡ in Scotland, it continued till 1799.§ In Wat Tyler's insurrection, the insurgents presented a demand for the abolition of villeinage, which was conceded by the young king, Richard II., and a charter of emancipation was prepared by his order. It was, however, revoked, on the renewal of the rebellion; and when application was made to Parliament, the Lords and Commons unanimously declared,‖ that they could not be deprived of the service of their villeins without their own consent; that they never had given it, and never would give it, even to save themselves from perishing altogether in one day. In 1526,

* Balmes, Protestantism and Catholicity, ch. xv., p. 90–94, Am. ed. Schmidt, Sur la Societe Civile, No. II., ch. iv. § 2, p. 232; No. III., ch. v., p. 462. Chastel, Influence de la Charite, No. II., ch. ii., p. 155.

† Hallam, Middle Ages, ch. ii., pt. ii., vol. i., p. 150. Robert (du Var), Hist. Classe. Ouvr., No. VII., ch. vi.. vol. ii., p. 231.

‡ Howitt, Rural Life in England.

§ McCulloch, Note to Smith's Wealth of Nations, p. 172.

‖ Pict. Hist. England, b. iv , ch. i., vol. i., p. 762., Am. ed. Robert (du Var), Hist. Classe. Ouvr., No. XI., ch. v., vol. iii., p. 379–80.

"a bill was brought into the House of Lords for the general manumission of bondmen in England: it was read three times in one day, and rejected."* And, until the decision of Lord Stowell, in November, 1827, "the personal traffic in slaves had been as public in London as in the West India islands. They were openly sold on the Royal Exchange."†

This brief notice of the historical progress of free labour proves that this institution can derive neither credit nor prestige from the mode of its introduction. It is sustained by no philosophy, but only by the most fallacious and pernicious sophistry; and the works which constitute our text supply the evidence that it can claim no presumption of right from its consequences to individuals and to societies. The first fruits of the general renunciation of serfdom were mendicancy, larceny, vice, crime, and pauperism, to which may be added Queen Elizabeth's poor laws. Its final fruitage is the destitution of the English labourer and the French proletaire, and the disintegration of European government and society. If, forty years ago, Hallam could not resist the conviction that the labouring classes had been more amply provided with sustenance, and better able to support their families comfortably under the reigns of Edward III. and Henry VI. than in the commencement of the nineteenth century,‡ how vast must now be the difference between the condition of the mediæval serfs and that of contemporary English freemen! And what testimony does this contrast bear to the respective justice and propriety of free and slave labour! Assuredly, it does not justify the exclusive pretensions of the former.

The principle which occasioned the substitution of free for slave labour was the prospect of diminished expenditure and increased gain. It is, after all, the sole motive which has upheld and extended the change. It is also, in the ultimate analysis, the sole ground on which the abolitionists have waged the war against slavery, and advocated the exclusive propriety of free labour. Look into their declamations, contemplate their tactics, survey the whole literature of political economy, and it will be manifest that the real argument is simply that free labour is cheaper and more productive or profitable than slave labour. This we do not doubt, if the maximum of profit is wrested from the labourer; but are government, and society, and the human family, created and ordered singly for the production, augmentation, and accumulation of wealth? We think not. The free labour enthusiasts maintain, practically, that they are; the defenders of slavery assert, both

* Wade's British History, sub anno.

† Wade's British History, p. 833. Some of these references are employed in the November number of De Bow's valuable Review.

‡ Hallam, Middle Ages, ch. ix., pt. ii., vol. ii., p. 433–434.

theoretically and practically, that they are not. It is true that the opponents of slavery, when not misled by imbecile hallucinations, endeavour to cloak their real motives and appetencies by pretending to be guided by the precepts of Christianity, the dictates of political philosophy, the impulses of philanthropy, and the welfare of mankind. Mrs. Jellaby is their Bona Dea. The first pretence has been repeatedly refuted, and the abolitionists, in their futile rage, denounce, repudiate, and deride the Bible. Have they not lately summoned a world's convention to sit in judgment upon and to condemn the Scriptures? The second pretence is only now submitted to serious criticism; but from that position they are certain to be driven. The third has been often shown to be equally hypocritical and delusive. And the fourth is convicted of fatal fallacy by the actual experience of every nation, where the system has been pressed to its full development in the midst of a dense population.

The consequence of the institution of free labour in England, which only affords the most perfect and matured type of the inherent tendencies of this mode of organizing labour, has been to divide the people into two classes, the miserable and the luxurious, the paupers and the rich. It has increased the facilities of the latter, both for personal gratifications and the multiplication of gains; it has diminished the comforts and opportunities of the former, until the ignorance, vice, and hunger of the larger class threaten to render all the advantages of the wealthy inoperative and insecure. The roots of society are deprived of nourishment, and are rotting away, and the tree cannot continue to produce leaves, or blossoms, or fruits. Apprehension must at length yield what justice has long denied, and a holocaust seems to be the only sacrifice which can expiate the error so complacently indulged. There is no longer any harmony, any sympathetic union, between the rich and the poor. The latter have hitherto been the victims; they may soon become the despoilers, and then the whole society must sink into hopeless annihilation. The commercial interests of capital and the ancient glory of England reluctantly compelled the nation to embark in a war with Russia; the enthusiasm of the nation accompanied the army and navy, but the English masses cannot or will not provide the troops for service; English capital cannot sustain the interruption of trade, nor long support the expenses of war; and the first pretext of a discreditable peace is eagerly embraced. Meanwhile the army is disorganized and maltreated, the government is impotent, the rulers are incompetent, and it is likely that all rulers must prove so in the midst of a society so corrupt, so diseased, so corroded by the exclusive thirst of gain, and so deluded by the exclusive enjoyments of free labour. The moral tone of the English people has been destroyed under the operation of free competition and the practice of free labour,

its power, its glory, its wealth, its prosperity, its industry, its independence, and its existence must soon follow its morals.

Freedom without subsistence is a horrid mockery; it is the administering of a poison, while pretending to offer the fruit of the tree of life: it is a sentence of death couched in the language of generous benevolence. This is exactly the course that has been pursued; nay, the policy adopted has been at times more dangerous and detestable. Emancipation has been enforced rather than conceded, to furnish excuses and opportunities for the diminution of the casual subsistence which the chances of life might have otherwise afforded to the labourer. And this is the system which claims universal homage and imitation! We prefer to take the warning, rather than to follow the example which it offers. But we will not run into the opposite extreme; we will not maintain that slavery is the sole, rightful condition of labour, but only assert that, so far, there has been no proof that this is essentially wrong, and that, where circumstances may render free labour expedient, proper, or necessary, it should be so guarded and protected that it may not prove a curse to the labourer and to the society of which he is a member. Had this been done effectually, perhaps had it been even sincerely attempted, there would have been little plausibility in the reveries of Chartists and Socialists. These wild schemers are only imprudently endeavouring to do, when it is too late, what should have been soberly done in advance by statesmanship and justice.

These observations on the principles and developments of the free labour system may be sufficient to exhibit the futility and insanity of the arguments adduced by its exclusive advocates, and to show that these possess, in their crusade against slavery, no other vantage ground than the prejudice of centuries. It will be noted that, so far as we have employed the testimony of authors or the evidence of facts, we have referred entirely to the advocates of free labour and the enemies of slavery. We have confuted them with their own statements and admissions, or with obvious facts and irrefragable inferences. We may now pass to the consideration of slavery, and we shall render our observations as brief as possible, as it is unnecessary to expatiate on a subject which has been often so fully and so ably discussed in these pages before.

The principles on which slavery is justified are these: it is natural; it is inevitable; it is expressly commanded by the Old Testament, and is indirectly sanctioned by the New. It cannot be entirely or universally abolished without introducing social disaster and individual suffering far beyond anything attributed to its influence. It is approved by the general experience of mankind and the general testimony of history. It occasions harmony, good order, and permanent prosperity in society. It prevents the collision between the two great agencies of production, capital, and labour, and avoids the internecine feud which thence arises. It

preserves the proportion between population and subsistence. It protects those that require protection, the young, the aged, and the infirm. It resists the tendency to convert all life and all social action into a mechanism for the mere augmentation of gain, and directs the minds and hearts of men to other and more elevated objects. It multiplies and strengthens the links which bind society together, and it affords the largest practicable amount of happiness and comfort to the largest number—nay, to all the members of the community. To these considerations we may add, that the enslavement of inferior races is an efficient and perhaps the sole available means for the physical improvement and the moral, social, and religious amelioration of such inferior races of humanity; that, indeed, it is the solitary method of retarding or preventing the extinction of inferior races by contact with the civilization of their superiors. That, so far as African slavery is concerned, against which philanthropic abolition is exclusively directed, it released the negroes from a much worse condition than their present state is even represented to be; that its abolition remands them to nearly all the vices and miseries of their pristine barbarism; and that the employment of this institution seems to be a necessary provision for the subjugation of the still untenanted or undeveloped regions of the earth; and consequently for the requisite increase of subsistence for the increasing millions of the earth's inhabitants.*

Of these justifications of slavery, some are abstract principles of right; the others, the principles of expediency. It is very evident, however, that the latter must always be preponderant in the determination of social and political problems. If a basis is obtained in the domain of right, if, indeed, the violation of justice be avoided, sound policy must and should regulate the particular institutions to be adopted. The demonstration of abstract right, and the disproof of any abstract wrong, constitute respectively the positive and negative elements in the establishment of the propriety of any social arrangements. Either is sufficient, though to some minds, and especially to those least familiar with ethical questions, the former alone appears entirely satisfactory. But the negative principle is, in a pre-eminent degree, an adequate argument in those cases in which the propriety of an existing and long practiced institution is to be defended. Such is the case in regard to slavery. Thus, although we have commenced our imperfect list of the principles on which slavery is justified, by the statement of the positive grounds, we deem the negative reasons the more

* This passage, the suggestions in regard to the valley of the Amazon, and this whole article, were written before the appearance of the essay on the Black Race in America, in the Southern Literary Messenger—to which we are under no obligations, except for the gratification afforded by it.

important, and virtually inclusive of the others. After the foundation is once laid in the rules of right, considerations of expediency, as exemplified by the past experience of the world, acquire irresistible force.

Though we have exhibited in a connected form the principal arguments in favour of slavery, we are not, as has been already intimated, the advocate of the system at all times and under all circumstances; nor do we think that the advantages ascribed to it are capable of realization coincidently with the maintenance of the slave trade, which some partisans of slavery have recently proposed to revive. All the evils which the feverish avidity of the times has occasioned in free communities, would be more rapidly and certainly introduced into slave societies, if the interests of the master ceased to be identified with the comfortable existence of the slave. We protest, then, against any project of the kind, which has only been suggested by an intemperate resistance to the opposite wrong, and has been seriously proposed only by those whose aversion to abolitionism has betrayed them into the other extreme. The great law of social morals and of social wisdom is, that all men are created for each other; but no man, no class, no race is created for the particular and separate interest of another man, another class, or another race. If selfishness in the individual is sin, it is vice, and blindness, and fatal folly in society. The interests of each must be advanced by the connected and reciprocal interests of all. Slavery, as any other social institution, is just only so long as it conforms to this law, and advances the interests of the slave concurrently with the interests of the master. We do not contemplate any equality of interests, but only their just proportion, agreeably to the prescriptions of distributive justice; for in this case, as in all others, the remark of Henry Cornelius Agrippa * is perfectly true, that the greatest equality is the greatest inequality. Whatever would diminish the interest, the tender and considerate interest, of the master in his slave, is calculated to frustrate all the alleged advantages of slavery, and would produce, as it has heretofore produced, greater evils than have been occasioned by the ominous conjunction of free competition and free labour, in the most civilized nations of Christendom, where the progress of events has composed a terrible commentary on the ancient text, that the nations of Europe were led astray by the fierce appetite for gain.†

Having guarded against misapprehension by these remarks, we

* "Cum omnes sibi habeantur æquales, nihil est tam inæquale, quam æqualitas ipsa." De Incert. et Van. Scient. c. lv. Cf. Comte, Syst. Pol. Pos., vol. i., p. 378.

† διαβάλλονται γὰρ πρὸς τῶν ἀρχαίων οἱ τὴν Εὐρώπην οἰκοῦντες σχεδὸν ἅπαντες ἐπὶ φιλαργυρίᾳ ἅμα κερδαίνοντες ἅμα δαπανῶντες τὰ περιγινόμενα αὐτοῖς. *Is. Lydus. de Mag.* iii. xlvi. p. 240.

shall notice very briefly the principles and effects of slavery, that they may be contrasted with the pretensions of free labour, so as to enable the sober-minded advocates of even the latter, to judge honestly and intelligently between their respective professions and performances. Very concise, indeed, must be our observations, and we shall pass over with a bare indication of their nature, those topics which have been already discussed sufficiently.

If any social institution whatever be sanctioned by the law of nature, the institution of society itself must possess this sanction, and be consequently a natural institution. It is utterly absurd to regard the parts, the details, as natural, without previously admitting the whole, of which they are members, to be so. If society be accordant with the law of nature, those institutions must also be natural, which are the primitive, spontaneous, and universal developments of society. The rule of St. Vincent of Lerins, "Quod semper, quod ubique, quod ab omnibus," is even more appropriately applicable in political science than in theology.* To the category of such institutions belong the relations of husband and wife, parent and child, master and servant or slave. So far as either speculative reasoning or historical experience can serve for our guidance, all of these relations are equally consonant with nature, and equally prescribed by her authority. All admit of variations and modifications, but the history of humanity shows that there is a wider latitude for differences in the first, than in the last of these relations. All of them are of spontaneous growth; all of them are maintained, regulated, and enlightened much more by instinctive sentiments than by special legislation. Thus slavery is approved by reason, universal experience, and natural feeling. What is the argument adduced to prove that the system so sanctioned is a violation of the laws of nature? It is the cant maxim, that "All men are born free and equal." We have already shown the utter futility and fallacy, and, we might say, the hypocrisy of this tenet. It is unsound, it is untenable, it is invalid for the purpose to which it has been applied, and it is disbelieved by those who utter it.

That slavery is desirable and inevitable under certain circumstances, and for the larger portion of humanity, may be inferred from the fact of its general and long continued existence; but is more cogently established by observing how its abolishment among races unprepared for freedom has always introduced such an abuse of liberty, as renders it a delusion, and entails the evils without any of the advantages, of slavery on the labourers. In Mexico and in the other Spanish American republics, where slavery has been abolished by law, from the fear of servile insurrections in the midst

* This is virtually the argument employed by Aristotle in the First Book of his Politics.

of other civil commotions, and not from the disapproval of slavery,* peonage has been substituted for it, and the labourers are appropriated to the service of the employer by cunningly keeping him in debt, instead of by the natural right of the master and owner.† Of course all the obligations and interests consequent upon ownership are dissolved by this process, while the exactions of service are pressed to the utmost so long as life and strength endure. The decline and decay of these rich colonies, in passing from colonial subjection to independence, may perhaps be attributed, in no slight degree, to the premature abolition of slavery, and to the iniquitous and impolitic system which has occupied its place. There is certainly nothing in the present condition of these fertile countries to justify Humboldt's exultation at the prospect of negro emancipation in the Spanish main. In the English colonies, the emancipation of the blacks has been followed by the apprentice system; slavery under another name and a harsher form, and by the importation of coolies, who are virtually, though not nominally, enslaved. In England, and even in New York, slavery has been soberly proposed as an alleviation for the existing miseries of the labouring classes; and the partial resemblance of their actual condition to the most barbarous species of slavery has been often pointed out. When all these things are duly considered, we may fairly conclude that slavery, though under rare influences capable of being avoided, is usually inevitable.

That the institution of slavery was practiced by the Jews, the chosen people of God; that it is prescribed by the Old Testament, and not forbidden by the New; that it is expressly recognized by St. Paul, and that abolitionism is just as expressly condemned by him; are points which require no proof, but which, nevertheless, have been often and abundantly proved already.

The present condition of England, Scotland, Ireland, France, Belgium, Germany, the older Northern States of this Union, the English colonies in the West Indies, and the Spanish republics on the continent, evinces that the entire abolition of slavery opens the door for the admission of infinitely worse evils than it pretends to remove. The decline and demoralization of the rich possessions of England in the Caribbean Sea, and on the main land of South America, attest the folly and the criminality of the emancipation of the blacks. The corruption and pauperism of the labouring multitudes of Europe show that free labour has encountered a worse destiny than ever threatened the serfs, or now menaces the slaves elsewhere.

It is sufficient to declare that the general experience of mankind

* Humboldt, Personal Narrarive, etc., ch. xii., vol. i., p. 397; ed. Bohn.

† Humboldt, Personal Narrative. Herndon's Exploration of the Valley of the Amazon.

is in favour of slavery, for free labour is an exceptional experiment, which has failed, or is failing, in the few cases in which it has hitherto been thoroughly tried; and though it might possibly be protected from the dangers that now encompass it, this is not a matter of experience, but enters into the domain of possibilities.

In the comparison of the two modes of regulating labour, the main question for the appreciation of our times is their respective influence on the determination of the relations of labour with capital. That this influence has been pernicious in the case of free labour appears by the deadly antagonism which prevails between these two great elements of production, wherever free labour is exclusively employed. It breeds hostility between the rich and the poor; it generates a conflict of interest between the employers and the employed; it arrays enterprise against industry; it induces strikes among the operatives, injurious to both parties, without relieving the complainants; it divides the products of industry, so that the fine flour goes into the hands of the large capitalist, and the bran (without a sufficiency of that), into the hands of the labourer; it stimulates luxury, ostentation, and riotous living in the one party, and it apportions disease, starvation, squalid penury, and death to the other; it forms a continual schism in the bosom of society, and corrodes all the cords of social union; it legislates in favour of the pecuniary interests of the community, and leaves the masses, who have no pecuniary interests, as they neither have nor can have any capital, to the sole protection of laws constantly operating against them. By diminishing the rewards and depressing the profits of labour, it renders industry a loathsome and too often a futile struggle; it thus offers a premium for vice, idleness, and crime, and inflicts the penalty of starvation on the honest and upright labourer; by denying the certainty of an adequate subsistence, his family is made a burthen to him, and either becomes an agony or a curse. In the one case, he sees them pining away in want, ignorance, and rags; in the other he is tempted to abuse them, and thus brutalize himself and his whole household, if we may speak even metaphorically of a household in his case. The weaker, the more upright the poor may be, the less is the chance of support, and the fewer the advantages derived from society. M. Chevalier estimates the whole annual production of France equally divided among the population at twelve and a half cents per diem et per caput; and a liberal calculation has supposed that out of this sum the larger part of the labouring class might receive about four cents and three-quarters per day. Nor is this all: it has been shown that this is not the consequence of any special iniquity, but the legitimate consequence of the operation of the laws of modern society; and that the tendency is daily to abridge these rations.*

* Proudhon, Idee Generale de la Revolution au XIXeme. Siecle; IIeme. Etude, § ii. p. 52, 2d ed., 1851.

England may not be quite so impoverished, but its moral constitution is still more alarming, and its misery more revolting. No wonder that myriads should fly from such woes to foreign lands! No wonder that they should refuse to replenish armies engaged in fighting the battles of capital, and in confirming the system which has produced their calamities! No wonder that the national integrity and the community of feeling—la solidarite—which are essential to national vitality, should be extinguished by such influences!

This gloomy portraiture is no exaggeration of the effects of the free labour scheme. We have only noted a few of the consequences which may be witnessed in daily operation. Whatever other evils may be incident to slavery, by whatever pernicious tendencies it may be characterized—and there is no human institution which does not easily incline to evil—its vices and dangers may be obviated by prudence, and they resemble those just described neither in virulence nor magnitude. Indeed, the identification of capital and labour, and the fusion of their apparently divergent interests, is to our minds the greatest and the peculiar advantage of the system. We would gladly dilate upon this pregnant but little appreciated topic, but must reserve our remarks for some more convenient opportunity. This union of the elements elsewhere conflicting, imposes a strong barrier to those dangerous tendencies which are now developing their fatal effects in free labour communities; and, at the same time, it accomplishes, silently and unostentatiously, those great purposes of society, the support of the poor and the protection of the helpless, which have been so insanely and calamitously neglected or defeated, in those countries where free labour is in vogue. They are threatened with the dismal alternative of anarchy or annihilation; and the former is only a more protracted and wretched progress to the latter. The rich, who have encouraged or permitted the growth of these evils, will then inevitably sink with those who have previously been the sole victims:

"Nobilis et pauper casu rapiuntur in uno."

The wealth of nations will vanish like a morning mist; and that which has been so exclusively the object of national pride and legislation, and endeavour, will ultimately frustrate itself, and disappear in the very moment of its anticipated triumph. Yet, with this result already in full view, the political economists and the advocates of the modern system still continue to sing the praises of free labour, because it produces larger immediate pecuniary gains than slavery, and to denounce the latter, because it renders a smaller nett revenue than the former. It is this very difference of profit, the difference in the average rewards of labour, in the distribution of the products between the capital and labour which have pro-

duced them, that has caused the terrible calamities of free societies, and averted such miseries from slaveholding communities. When we see political economists so blinded by narrow aims as to ignore or be ignorant of the more urgent wants of society than those embraced in their special investigations, and also of the real effects of the contrasted systems, we are strongly inclined to apply to their science, especially when the attempt is made to carry it rigidly into practice, the words of the last of the Roman poets:

> "Blanda quidem vultus, sed qua non tetrior ulla,
> Ultrices fucata genus, et amicta dolosis
> Illecebris, torvos auro circumlinit hydros."

It is unnecessary to prove by descending to details and to the economy of single household and families, how efficaciously slavery protects the labourer and his children, the old age of the one and the infancy of the other, from that wretchedness and want which are the principal fruits of freedom. Fire, shelter, food, clothing, nursing, medical attendance, and the constant assurance of these prime necessaries of life, are provided for the slave; it is the uncertainty of obtaining any of these things which characterizes the condition of the proletaire. We do not prove this point, because it has been already proved a hundred times; because it is scarcely possible to take up a newspaper essay, a formal treatise, or a romance on slavery, without finding superabundant proof to this effect. Of course, when such are the characteristics of slavery, it is needless to add that it ministers efficaciously to the comfort and happiness of the largest number of the members of society, for in every society the labourers constitute the largest number, and on their well-being the welfare of the whole society depends.

The beneficial influences of slavery in facilitating the general course of human advancement, and opening the avenues of civilization to the inferior and undeveloped races of humanity, have been ably expounded by those who have defended the institution, but scarcely with that fulness and generality of treatment which the subject admits and demands. The argument hitherto has been usually confined to the consideration of negro slavery, and to the illustration of its happy effects in improving the African character, physically, morally, socially, and religiously. To this extent the investigation has been very satisfactorily pursued; but this range is very far from being co-extensive with the capacity and requirements of the question. It is expedient to trace in the past history of the world, the mode in which slavery has operated as the prime instrument in the civilization and education of the different races of men, and how largely it has contributed to the progress of the human family. In respect to African slavery in particular, many writers have occupied themselves with showing that the Africans have been released from a state of the most savage barbarism, and

admitted to the enjoyment of the protection, tranquillity, and other advantages of civilized life (so far as they were competent to participate in the last), by the fact and consequences of their enslavement. The horrid cruelties and beastly depravities from which the negroes have been rescued, and the infinite amelioration of their condition, even under the worst form which slavery has assumed on this continent, have been elucidated in a manner which should have arrested the denunciations of abolitionists, if they had been as willing to listen to reason, as they have been anxious to indulge in calumnies. But hitherto, or at least until the last few months, no sufficient attention has been paid to the prospective advantages and the prospective necessity of negro slavery, for the future welfare of humanity. The rapid increase of population in the older countries of the world has pressed so heavily upon subsistence, and even on the means of production, that it becomes much more essential to enlarge the area of cultivation than the area of freedom. New lands must be reclaimed for human use; dense forests must be cleared off, and additional space acquired for the productive industry of men; crowded populations must be dispersed, and distributed over the regions now unoccupied, where the exuberant energies of nature waste themselves in unheeded luxuriance. The richest countries of the globe remain uninhabited and unemployed. They offer an abundant support to all who will avail themselves of their bounty, and a sufficient surplus of production for the sustenance of all the starving myriads of the earth. The interior of South America, which is still almost a terra incognita, despite of the hurried explorations of Messrs. Herndon and Gibbon, would alone support more inhabitants than the population of Europe numbers, and postpone for centuries the irremediable starvation and pauperism which menace annihilation to the millions of that continent. But it is not by free labour and free competition, and the renewed operation of the modern commercial system of society, that those exuberant lands which lie under the shadow of the Andes, and along the magnificent waters of the Amazon, the Orinoco, and the Parana, are to be brought into cultivation and made available for man. This would be a vain hope. The attempt would fail to achieve the desired effect, either from the influence of the climate, or from the transference of a diseased social organization to a new soil, whose very wealth would sooner and more perniciously develope its pernicious tendencies. The only agency which can be effectually applied to the cultivation of the feracious lands of the torrid zone is negro slavery. Under its operation, the labourers would be supplied with the necessaries and necessary comforts of life; the owners of the slaves would be rapidly enriched, and the whole of humanity would be relieved by the diminution of population where it was too dense, and by the simultaneous increase of markets and alimentary products.

Thus, the question of negro slavery is implicated with all the great social problems of the current age. Originating in considerations of moral propriety and social expediency, it embraces the fundamental enigma of the organization of labour, and, transcending even this wide sphere, extends to the future destiny of the inhabitants of nearly the whole globe. Such a question cannot be too diligently studied. Its comprehensive examination has only commenced; and we may have rendered some service by estimating its amplitude, and touching upon some of its grand subdivisions.

We have only indicated the main topics of inquiry. Volumes must be written before they are fully elucidated, and the antagonism between the systems of free and slave labour is finally ended. The mere statement of the character and conditions of the argument, the determination of its orbit, and the specification of its chief departments, will suffice to show how unreasonable, how unfounded and how invalid are the exclusive pretensions of the free labour system, and how malignant and absurd are the fanatical denunciations fulminated against slavery.

We have laid down the slavery question in its broadest proportions, and now invite its friends and its enemies to its fullest examination and discussion, confident of the ultimate decision in favour of slavery.

"Magna est veritas, et prævalebit."

Art. V.—THE NEBULAR HYPOTHESIS.

Cours de Philosophie Positive. Par M. Auguste Comte.
Vestiges of the Natural History of Creation.

The boundaries which separate the known from the unknown are never well defined. In every department of knowledge besides what is certain and undoubted, there is also what is probable, or what is only believed. As in material progress, there are outposts of civilization that have been won from barbarism, where the savage chant or the howl of the wolf may be heard every night, scaring sleep from the couch of the pioneer, so there are conquests of truth, which genius has made, where all the associated principles are yet unknown. Sometimes the advance of knowledge is like that of the morning sunlight, which illumines the tops of mountains that are still below the horizon; and then again like

the twilight, which sheds first a gentle dawning on the dark objects, then a fuller and a stronger light, until at last all are clothed with the bright effulgence of the god of day. In such a half illuminated region, shadows are mistaken for real objects; illusions of many kinds impose themselves on us; both the true and the false are mistaken for each other.

This irregular progress is not less true of physical than it is of moral science. Before any general truth is discovered, first one and then another fact on which it depends is learned to be true; first one subordinate principle and then another is revealed; until, after a while, the accumulation of facts and particular propositions on which the generalized truth is to rest, leads us to our final conclusion. During this march of discovery, many errors lift up their heads and claim the homage and approbation we should give to truth alone. Many objects appear, whose real character we are unable to determine. By some, these are regarded as realities; by some, as illusions; and by others as undetermined or unknown, or perhaps unknowable.

Of this last character is the question concerning the plurality of worlds, which has been a favourite subject of discussion for two or three years past. The analogies which favour or oppose such a belief have been arrayed against each other with consummate ability. Every branch of science has been diligently explored for points of similarity between our earth and the stars, and religion has been asked for her contributions to the controversy. But as the Bible is silent, and science furnishes nothing but analogies to decide the question, it remains, and must ever remain, undetermined. Nothing hinders us from believing either side of the question, and some will form no opinion at all on the subject. This last class of persons is probably very small, since doubt is unnatural and difficult. Not one in a thousand who have interested themselves in the discussion have probably closed the last volume or review without giving their assent to one side or the other. But, however universal this assent may be, faith, not being based on reason or experience, is necessarily weak and unstable.

Another undetermined question connected with astronomy has been longer before the world and commanded a larger share of interest. The nebular hypothesis was brought forward before the beginning of the present century. Although it has occupied no considerable space in scientific journals, our popular literature has devoted more attention to it than to any of the acknowledged truths of astronomy. The Vestiges of Creation has made the subject familiar to tens of thousands of readers. The numerous geological writers who are accustomed to indulge in bold speculations, and to give a ready assent to plausible theories, have introduced it to still more general notice.

But although this hypothesis is not altogether baseless, as there

are many facts which it accounts for, and as it possesses some of the characteristics of a true philosophical theory, it forms no part of astronomical science. True philosophy rejects every thing which is unproved. The domain of astronomy that can be explored and known is so vast and interesting that those who cultivate it refuse any place in their regard to that which is doubtful. They look with distrust and suspicion upon every pretension that is not fully established. However pure the gold may be, unless it has been tried in the crucible, they treat it as uncurrent. No stamp of authority, however high may be its character, can secure its reception, unless reason and evidence are brought forward sufficient to satisfy their exacting demands. Though Herschel, and La Place, and Comte, representing as they do the practical, the mathematical, and the positive schools of philosophy, have given their names and assent to this hypothesis, their authority has not the weight of a feather in the estimate of astronomers, where facts, observations, proofs, are the things demanded; and until these are brought forward, opinions and beliefs cannot be admitted as evidence.

But, although astronomy declines to receive this hypothesis, the popular mind is not so cautious and prudent in forming its judgment. Thousands of educated and intelligent people, who are accustomed to consider their opinions with care before coming to a conclusion, and not merely the bold and credulous vulgar, have satisfied themselves of its truth. Its history, the facts on which it rests, the objections that are made to it, the affinities and relations which it has to other departments of acknowledged truth, the degree of confidence which it ought to have in the minds of wise and thoughtful men, are questions of general and popular interest.

The nebular theory, as first proposed by Sir William Herschel, did not differ in any essential particulars from that now received; but many of the reasons which favour it, and the facts which support it, were then unknown. With his magnificent reflector, which far surpassed in space-penetrating power any telescope of his time, Sir William discovered, in the vast expanse above us, numerous cloud-like objects, similar in appearance to our milky way. Many that had been seen before by inferior glasses, he found to be collections of fixed stars, so distant from the earth and so near to each other, that, to former observers, they had appeared to be misty fog-like nebulæ. Others were merely broken up, by his highest magnifying powers, into mottled or knotty masses, that made him believe that they would be resolved into stars, when they should be examined by better telescopes than his. The larger number remained unresolved and unbroken. They seemed like a fluid mist floating in the sky, of unequal densities and brightness in their several parts, of irregular and dissimilar forms; and from many indications he was forced to believe, though unwil-

ling for a long while to do so, that the cloud which he saw was not made up of suns, but was a real mist of luminous matter. Sometimes single stars, large and brilliant, were seen in the middle of a sphere of this floating dust. Sometimes a circular or elliptic disc appeared, faint and thin, near its circumference, but condensed towards the centre with a strong and sudden brilliancy. This central condensation did not always consist of stars, but often retained the nebulous character. Many varieties of all these and of other forms and conditions, were also presented. Sir William was a bold philosopher, and soon grouped all these appearances together, by regarding them as the successive modifications of one and the same object. He imagined the fluid mass of shining cloud to be the primitive form; then, under the influence of mutual attraction, he supposed the fluid to become denser towards the center; then a star to be formed by condensation; then several stars; until, at last, all was converted into a cluster of suns. The nebulæ were thus considered as the stuff out of which worlds were made; the dust out of which the Creator formed suns and systems of suns; the raw material which God had used in fabricating the universe. Our sun and his attendant planets and their satellites, were once a nebula, extending as one body over the whole orbit of Neptune, or six thousand millions of miles in diameter. As it condensed, the outer planets were formed, then the earth, then the inner planets; and, last of all, the sun. The misty particles were at first candescent with light and heat, but, as they cooled, they lost the power of mutual repulsion, and were gathered together into one mass. The planets, having had a longer time to cool, in the immense cycle of time during which these changes have been going on, have become non-luminous; but the central sun retains yet its light and heat, to be after a while extinguished by the consumption of its combustible materials. The planets are charred suns; their ignitible materials have been burned up, their fires have gone out, at least on the surface; and though, on the earth, coal, and peat, and wood, are now abundant, these have been all formed since the igneous lavas and the hot ocean covered the whole face of our globe. The same fate awaits the sun, and, although generation after generation may flourish on the earth before that great event shall be witnessed, it must come at last. A fire cannot burn forever. The sun must be extinguished, and a night of darkness and an icy pall which no summer will dissolve, shall cover the earth; and its inhabitants, if any survive to behold this great catastrophe, shall not perish with heat, but with cold. Far off, very far, may be the hour when this result shall happen; but it cannot be postponed forever.

> "The day shall come, that great avenging day,
> Which Troy's proud glories in the dust shall lay;
> When Priam's power and Priam's self shall fall,
> And one prodigious ruin swallow all."

On such a flimsy basis was the nebular theory first propounded. The different degrees of condensation observed in the several nebulæ induced the bold and speculative mind of the elder Herschel to regard all of them as successive conditions of a single object; just as if a young plant starting from the ground, and then a shrub, and afterwards a small and then a larger tree, and last a full grown oak, should be presented to the gaze of a visitor on our earth who had always lived on a distant planet, where vegetable life had no existence, he might be able, without experience, to pronounce them one and the same object in different stages of growth. On this simple analogy, with no other facts or observations, a modern astronomer, at the close of the eighteenth century, in an age of careful investigation and cautious induction, constructed this fanciful history of the past and future of our solar system, and of the multitude of suns and clusters of suns that fill the heavens!

In this condition of the nebular theory, it was taken up by La Place, who considered it almost entirely with reference to our own solar system. He put together a large number of facts which were not accounted for by the Newtonian theory of universal gravitation, and showed that the chances were millions to one, that these were not arbitrary accidental phenomena, but due to some particular cause. Since his time these facts have largely accumulated, and if the chances against the fortuitous concurrence of these phenomena were so great in his time, they are now almost beyond the power of numbers to express.

When La Place published his Systeme du Monde, but seven planets had been discovered, all circulating in one direction around the sun. Now, why, he asked, should all these revolve in their annual orbits from west to east? If, in the beginning, God had hurled them into space, and, in accordance with his plans of creation and providence, had desired that they should be warmed and lighted by our great central luminary, can any reason be assigned why all their motions should be direct, and none retrograde? Why should not the second, moving as it did far inside or far outside of the first, millions upon millions of miles distant from it, revolve at right angles to the direction of the former planet, or opposite, or in a path largely inclined to it? The chances are five or six to one against the sameness of direction that is found to exist; but counting them merely two to one, because the motions are all direct and none retrograde, the improbability of this oneness of direction for so many planets becomes nearly infinite.

Suppose a ship should be stranded in a dark cloudy night, and a solitary sailor should escape in a boat, without a compass, or a current, or a wind, or any other means of deciding on the proper course to approach the shore which was near by, what probability would there be of his selecting the right direction? Evidently the chances would be equal for and against his heading his boat towards

the land. But suppose he should steer rightly, and the same thing should happen again the next night, under the same circumstances, the chance that both would save themselves would only be one to four. If the same occurrence should happen for ten nights, the chances against all turning towards the shore would be less than one in a thousand; for twenty nights, one in a million; for thirty nights, one in a billion; for forty nights, one in a trillion. And it would be utterly incredible that, without any cause, the forty persons should every one row towards the shore, and escape from the threatened destruction. Alike incredible is it, that more than forty planets, without any cause, should all move in one direction round the sun.

If the several boats should be steered directly towards the shore, or very nearly so, the chances against this being done without a cause cannot be expressed by any of the ordinary names in our arithmetical numerations. Alike great is the improbability of all the planets moving nearly in the same plane in their orbits round the sun. Only one of them has its inclination as much as thirty degrees from the plane of the ecliptic; three-fourths of them are within ten degrees; and it is utterly impossible for any sane mind, capable of understanding and appreciating the improbability of this identity of direction, to believe that all has been brought about without some cause, physical or mental, to produce this result.

But it was not merely these two facts which the doctrine of universal gravity failed to account for, but several others, distinct and independent of these, all of which La Place grouped together and explained by the nebular hypothesis.

The several phenomena which he undertook to explain were these:

1. All the planets, now forty-seven in number, revolve round the sun in one direction. The motion is always direct, and never retrograde.

2. All move nearly in one plane, the plane of the ecliptic.

3. All revolve on their axes in one direction, from west to east.

4. The satellites move around their primaries in this same direction, from west to east; and nearly in the plane of the ecliptic; and turn on their axis in one direction, the same as that of their primaries.

5. The orbits of all the planets, and of their satellites, are nearly circular.

6. The sun revolves on his axis in the same direction as the planets, and nearly in the same plane.

Here are six sets of phenomena, of which the theory of Newton affords no explanation. Together they imply a large number of facts, complex, diverse, unconnected with each other, having no mutual dependence, and, if all can be accounted for by a simple supposition, and the aid of the known laws of matter and motion,

a high degree of probability will be readily allowed to the supposition. This is what La Place undertook, not with confidence or satisfaction, but with the modesty and caution of a modern philosopher; with what success will now be considered.

He started with the nebula of Herschel, and with nothing more. To this he made no additions; he superadded no second, third, and fourth conditions; he overloaded it with no probable or improbable properties, or motions, or shapes; he took it just as Herschell saw it in the heavens. Surely this starting point has all the simplicity of truth and nature, and accords well with our notions of the Creator's workmanship.

Has it also the condition which Bacon so prominently insisted on as a necessary sine qua non in hypothetical reasoning, a *vera causa*, for its foundation? There seem to be nebulæ in the sky; but are there any? May not the objects which Herschel saw be all resolved into suns, when finer art than Fraunhofer's and greater wealth than Earl Rosse's, shall make their contributions to science? The progress of discovery has surely been altogether in that direction. The refractor at Cambridge has dissipated the doubts which so long prevailed about the great nebula of Orion, and broken his sword-handle into glittering fragments shining with separate and distinct lustre. The great reflector of Earl Rosse has resolved others, so that the suspicion is strong that all may be mere starry clusters. Although doubt is thus thrown upon the very starting point of La Place, the larger number are yet unresolved, and the existence of fluid nebulæ is yet received by astronomers.

Reference may, however, be made to our atmosphere, to the sun's gaseous envelope, to the zodiacal light, and to comets also, to make the existence of nebulous bodies more probable. Our atmosphere is gaseous, though not heated or luminous; the sun's is hot, and visible at immense distances, though it is small compared with the assumed nebula of La Place, which extended more than six thousand millions of miles; the zodiacal light is large, fluid, etherial, but it is not heated, or shining with its own light; the comets sometimes stretch their immense trains hundreds of millions of miles, but they are non-luminous, and their amount of matter is insignificant compared with the earth's or with the sun's. These phenomena do not, therefore, furnish any examples in all respects identical with the supposed nebula of La Place. They are similar, however, although not the same. The foundation of the theory is thus laid in a supposed body, of which experience furnishes no undoubted example. There may be such bodies outside of our system. They so appear in our best telescopes, and it is believed by astronomers that they exist. In our own neighborhood, we see several kinds of bodies much like them, though not identical. The supposed existence of such a body as La Place's is therefore allowable.

Will this nebula revolve on its axis? Not from any internal forces, but, as there will be on every side moving suns and grazing comets hurrying by from time to time, it will be almost impossible that it should remain in equilibrium. If perfectly steady at first, it must almost of necessity begin after a while to revolve, from the external forces which solicit it.

If a comet should pass by it, or through it, or become buried in its mass after a collision, it could not fail to excite a rotatory movement. It would act on one side more than on another, and drag that portion in its own direction. When this motion was once begun, it could never be lost. On our earth, or in our atmosphere, many a moving body seems to stop of itself. But no law of physics is more firmly established than the indestructibility of motion. The apparent loss is always a transference or communication of momentum, and never a destruction or cessation. If, then, a passing comet or sun should draw one side of the broad nebula, this forward movement would set the whole mass in motion, and this rotation would never cease. There are many other ways in which this rotatory motion may be communicated, every one of which could not fail to generate this result, without resorting to an addition to the hypothesis by supposing the original mass to be put in motion by its Creator.

Having now a revolving, luminous, and therefore heated nebula, cooling and condensation must begin at the surface. The aggregation of these cooled particles will make them too heavy to remain on the outside. The vaporized earths which an intense heat had kept in a gaseous state, becoming solidified, descend to the interior. As a new surface is exposed, the radiation of caloric into the free open space outside, must of necessity cool and condense other portions of the mass, until the whole nebula is contracted much beyond its original dimensions.

These outer materials revolving in a larger circle than the inner, have a greater velocity, and, as they descend and mingle with the interior particles, they hurry them along in their rotatory motion, and thus increase the revolving velocity of the whole body. As this is made more and more rapid by the continuance of the condensations, the centrifugal force after a while becomes so strong, that when the interior velocity is still farther augmented, the outer parts can no longer be dragged along by the inner mass, but separate from it in the form of a ring. As this ring consolidates, the concretions, that are formed by cooling, cannot fall towards the centre of the primitive body, because their centrifugal force exceeds the attraction of the inner mass. They tend, therefore, to coalesce among themselves into a more compact and dense form, separate and outside of the inner body, whose more rapid revolution has deserted them and left them to move in a distinct orbit. After farther condensation is effected, the ring is broken up and gathered

into a globular shape, and the first planet appears. In like manner another and another planet would be formed, until all that now exist take their place in the sky, and the central portion yet remaining is our sun, who yet retains his primitive heat and motion.

The planets that have been first formed will continue to cool, and they may throw off satillites precisely in the same manner as the original nebula had thrown off planets.

Internal forces will operate with greater or less energy on all of these masses, and it may easily happen that light gaseous bodies may be hurled off backward or forwards, or at right angles to the plane of the ecliptic, and thus give rise to the comets that belong to our system. Their small masses and the near equality between the centrifugal and attractive forces would render this projection the more easy, and thus give birth to numerous comets, running in every direction through the sky.

Such is the nebular hypothesis, as now explained and understood. The physical principles involved, are for the most part well established, and many of them have been confirmed by satisfactory experiments. The cooling of the heated body, as it is every where surrounded by the cold, heatless vacuum outside of it, is natural and necessary. The increased velocity of rotation by the contraction, is readily illustrated by a "revolving ball held by a string which wraps round the finger at each revolution." The separation of the rings, as the velocity of the mass is increased, and their collection into globes revolving on their axes, have been beautifully illustrated by the experiments of Professor Plateau, which have been often repeated and confirmed in the most satisfactory manner.

Does, now, this theory account for the phenomena? Are all the facts, which it is brought forward to explain, simple and necessary consequences of the hypothesis, or must it be loaded and embarrassed with new suppositions, depriving it of simplicity and beauty? Let us consider this particularly.

1. It plainly follows from this, that the planets will all move in one direction.

2. It is equally evident that they will move nearly in one plane. If the rings were in every respect homogeneous and symmetrical, their motion would coincide exactly with the sun's equator, and all would be in the same identical plane. But if the ring had different densities in its several parts, or had any internal motions, then the orbitual movement would only be nearly in the plane of the nebular equator. Hence we have the second set of phenomena fully explained.

3. The different parts of the ring being at different distances from the centre of the nebular body, would have unequal velocities; the outer parts moving faster than the inner, because revolving in a larger circle. Now these outer and inner parts of the ring

coming together by their mutual attraction, as the cooling and condensing goes on, their unequal velocities would give to the mass formed by the aggregation a rotatory motion, the exterior surface moving forwards and the interior backwards. And this is exactly the way the planets revolve on their axes.

To illustrate this by a comparison. Suppose two steamboats to meet on a river, and to pass very near to each other. Let two persons jump from the two decks and meet in each other's arms midway between the boats. As they clasp each other, one of them would tend to go up the stream and the other down, and the two would whirl around as they fall into the water. So would it be if the two boats were not meeting, but passing each other. The person jumping from the fast boat would have a greater forward velocity than the other; and as they met face to face, he would move faster than the other, and the tendency to rotate would exist as before, the direction of the revolution being that of the faster boat. The rapidity of the rotation in the first case depends on the sum of the two velocities, and in the latter on their difference.

So it is with the outer and inner portions of the nebular ring. The velocity of the exterior being greater than that of the interior, when the whole is congregated into one mass, a rotary movement is generated, which is dependent on the difference between the two velocities of the outer and inner parts. The direction of rotation coincides with that of the outer portions of the ring, and is opposite to that of the inner portions.

In this way the rotation of the earth and of all the planets on their axes, in one and the same direction, is a simple consequence of the nebular theory.

4. After the ring was formed, it would be unstable, and its continued circulation in this shape would be nearly impossible. As it broke up, it would collect into a globular form. When this globe further cooled, rings might be thrown off from its surface, as from the original nebula, and thus the satellites of the several planets would be produced. In this mode of formation, the planes of the orbits of the moons would evidently be nearly in the nebular equator, and the direction of rotation of the primaries and secondaries would be the same. The planes would not be exactly identical because the secondary rings, collecting at the centre of gravity, would not, probably, unite at the exact centre of magnitude.

In every respect, therefore, does the nebular hypothesis explain the fourth set of facts that La Place gathered together to form the basis of his theory.

5. The centripetal force of the particles in the ring, is almost exactly equal to the centrifugal force arising from inertia. If the latter had been much above the former, the ring would have been earlier formed; if the other had been the largest, the ring could not have been formed at all.

Now, if these two forces were exactly equal, the orbit of the new planet would be a perfect circle; if nearly equal, it would be an ellipse of small eccentricity. That the two forces should be exactly equal, is almost impossible; for though this might be true in some parts of the mass, the chances are infinite to one, that this equality should exist in the resulting body that would be formed by the final aggregation of all the parts of the ring. The centre of gyration will not be the same as the centre of gravity. They would be near to each other, however, and thus the orbitual motion would be a broad oval, almost the same as a circle; and this is the exact form of the several planetary orbits.

6. That the central sun would revolve on his axis faster than any of the planets in their orbits, and in the same direction and nearly in the same plane, is a simple and evident consequence of the nebular theory.

And thus all the six sets of facts, enumerated above as unexplained phenomena, are fully accounted for by the nebular hypothesis.

Are there no facts inconsistent with this theory? If any, they overturn and destroy it. If a single one contradicts it, that one will be sufficient to require its rejection. Let us consider this question.

1. It has been said above, that the satellites revolve nearly in the plane of the ecliptic. But this is not in every case true. The moons of Uranus move nearly at right angles to this plane, and thus form a striking exception to the general movements of the other satellites. To explain this, it was suggested, that, as Uranus was at the outer boundary of our system, some exterior cause might have interfered with the ordinary forces, and produced this result. The recent discovery of Neptune, which shows that our system extends far outside of Uranus, destroys the validity of this suggestion, which was not very satisfactory before.

It has been said, also, that this fact, though unexplained by the nebular theory, is not inconsistent with it; that although some foreign cause must be assigned to account for these movements, this requirement is not fatal to the theory we have been considering; that it explains many facts, but not all, and that this failure though an objection to its completeness and comprehensiveness, is none to its truth; and that, although it leaves something still wanting to account for all the phenomena of the universe, it must claim to be regarded and received for what it does explain.

This is not very satisfactory. Here is a class of phenomena, the direction of the several satellites of our system. There are twenty of these moons; six of them belong to Uranus, and move quite differently from the rest. It is extremely probable that the true explanation of the movements of the fourteen applies also to the other six. If the nebular theory accounts for the one set, it

ought also for the rest. Nature is so simple and parsimonious in her causes, that, when we multiply their number, we generally fall into error.

It is not, however, very difficult to imagine the possibility of this reversion of the satellites of Uranus. In Plateau's experiments it seldom happened that the ring broke up into a single globe. Generally, one large one and several small ones were formed. Suppose two to be formed nearly at the same distance from the sun. By the laws of Kepler, the time of revolution round the sun would be almost exactly the same. But, not being exactly identical, the inner one would overtake the outer, and come opposite to it; or, if very nearly at the same distance, it would come into contact and the two fluid gaseous globes would coalesce. The impact of the outer, if striking exactly at the equator of the first, would merely lessen its rotatory movement. But, if it struck it at any point between the equator and the pole—and the chances would be infinitely in favour of this—the axis of revolution would be changed, and even a *bouleversement* of the axis of rotation might be effected.

There is nothing at all improbable, much less impossible, in this conjunction of circumstances, and it may, therefore, be affirmed, that this alteration in the axis is not contradictory to the nebular hypothesis. After the plane of the equator is changed, the farther cooling of the planet would throw off or abandon successive rings in this new plane, and their aggregation would give the six moons which we now find moving round Uranus in a retrograde direction, and nearly at right angles to the ecliptic.

2. The great eccentricity and the large inclination of some of the asteroids, is presented as an objection.

But this merely indicates a want of unity in the aggregation of the several planetary rings. If any internal forces should break up the ring before it is gathered into one mass, or if, in consequence of dissimilarity of its elementary constituents, it should be separated into many parts, it might form a hundred or a thousand separate planets, each of them small and light, revolving in distinct orbits, but all near each other. There is only one point in the ring where the centrifugal force would balance the sun's attraction, and the planet formed at about that distance would describe nearly a circle; while those within or without would move in ellipses of larger eccentricity, and those formed at the sides of the ring would have large inclinations to the plane of the nebulous equator.

No serious or fatal difficulty arises, therefore, from these thirty-nine asteroids which have been discovered between Mars and Jupiter.

3. The inferior density of the sun compared with the inner planets, seems to oppose the nebular theory.

But to this it is answered, that the intense heat of the sun expands and enlarges his magnitude, and thus lessens his density, although he may be composed of materials which would be denser than those of the earth at the same temperature.

Another answer not less satisfactory, is founded on the gaseous nature of the sun's atmosphere. Not only are the burning gases floating as an envelope around his solid globe, and so abundant as to keep up the most rapid, and intense, and continued ignition, but the uninflammable gases also, products of the previous combustion which has been going on for ages of ages, may occupy a thick stratum of the sun's mass hundreds or thousands of miles in depth. The lightness of this outer layer will allow a greater density to the solid globe within.

As each of these causes is real and not hypothetical, they both co-operate towards explaining the small specific gravity of the sun, and thus remove the slight objection to the nebular theory that comes from this source.

4. It has been said, that the matter of our system could never have filled the vast space between the sun and Neptune, a distance of three thousand millions of miles.

If the whole mass were a sphere, and had this immense radius, the average density would be millions of times rarer than atmospheric air. And as it would not probably be homogeneous, the thinness of the outer parts would be still greater. But, as nature knows no limits, this extreme rarity is not impossible. Nothing, however, prevents us from supposing that the nebulous mass was a disc like the ring of Saturn. This is a flat body nearly two hundred thousand miles in diameter, and less than one hundred miles in thickness; so that, without any discussion as to the form which a body might take, whose diameter was six thousand millions of miles, and revolving once in a hundred and sixty years, we may learn from this example, that a thin disc extending to the distance of Neptune, and revolving with the velocity which he does, might be in a condition of equilibrium; and this, therefore, is a form that may be assumed as the real one that once existed around our sun. With a flat disc like this, and even if very much thicker than the ring of Saturn, there is no difficulty in finding enough matter in our system to fill up the space from the sun to Neptune, with as dense a gas as may be desired.

5. There is a difficulty suggested about the origin of the revolving velocity. The author of "The Vestiges" supposes this revolution to be generated by the meeting near the centre of the descending currents of condensed matter, just as the whirling motion of the water in a funnel is produced. But these phenomena are not similar, and we cannot, therefore, justify his inference; nor do we know of any physical principle by which a revolving velocity can be generated by the internal motions of

a single body. The laws of action and re-action seem to forbid this.

The generation of the motion by a passing comet is insufficient, because the whole momentum of such a small body, or even of one a million of times larger, would not produce the necessary motion. A passing sun of immense size may be proposed. But, to produce the desired result, it must have moved very near the nebula, since otherwise it could not act unequally on the opposite sides; and it must have passed very slowly, since a rapid motion would not allow sufficient time to overcome the inertia of the disc. With these conditions, the commencement of the revolving motion may be accounted for; but their co-existence is quite improbable.

Probably the most satisfactory way of removing this difficulty, will be to make the revolving of the disc a part of the hypothesis itself. In every department of physics, the rule is the same as in the drama, not to introduce a Deity, unless there is a necessity for his interference.

> "Nec Deus intersit, nisi dignus vindice nodus
> Inciderit."

But where physical causes fail to account for phenomena, no other recourse is left to us.

6. It is said that the hypothesis has now lost its simplicity. First, it was a nebula; second, a revolving nebula; third, candescent with the most intense heat; fourth, that it was cooling and contracting, and constantly accelerating its velocity; and fifth, that it arrived by contraction at critical periods, when large thick rings were thrown off to produce the several planets.

But of these, only the first three are suppositions, the last two being necessary consequences of physical laws; and these three are warranted by corresponding phenomena in the heavens.

If it now be considered that no phenomena contradict the nebular hypothesis, and that no fatal objections to it have been brought forward, there is still another question that must receive a satisfactory answer, before this theory should be received. Even if it be granted that the effects to be explained are not accidental, but the result of causes to be sought for by proper investigation; may not explanations be given of these phenomena by means of other causes than the nebular theory?

1. Has not Deity adjusted the solar system in the way he has, so as to make it suitable for the habitation of man and other intelligent beings?

Only two of the phenomena to be explained by the nebular theory could have been arranged for this purpose, the circular

orbits of the planets, and their revolution on their axes nearly in the plane of the ecliptic. By making the orbits nearly circular, and the revolution on the axes in the existing direction, a regular supply of heat from the sun is secured, and thus the earth is accommodated to man.

But it would have been easy for the great Creator to have given man a different constitution, and adapted him to greater varieties of temperature.

Besides, a considerable change of distance is compatible with great uniformity of temperature. The earth is now nearest the sun in winter, but although we receive one-fifteenth more heat at that time than in the summer, it produces but a slight effect on our seasons. The inhabitants of the southern hemisphere have the sun nearest in summer and farthest in winter; but no perceptible difference in northern and southern climates is attributable to this cause. If the eccentricity of the earth's orbit were much greater than it now is, the effect would still be small. On account of the invariability of the major axis, the average temperature for the whole year would be slightly increased. The more rapid movement of the earth when near her perihelion would distribute, as now, precisely the same total amount of heat in the winter as in the summer. And as the inclination of the sun's rays makes us experience the present difference between summer and winter, a very considerable change in the eccentricity of the earth's orbit would be without any sensible effect, and leave our climates much the same as they now are. This suggestion cannot, therefore, account for the phenomena of circular orbits, much less for the others.

2. May not the several facts that have been noticed, be arrangements instituted by Deity to give perpetuity to our system? Certain it is that several of them have been used in demonstrating its stability; and it has been stated, that if the small eccentricity of the orbits of the planets, their slight inclination to the ecliptic, the sameness of their direction around the sun, and their comparative insignificance compared with his immense mass, were not elements of the actual constitution of the heavens; all the proof we now have for the stability of our system, would disappear from analysis.

Doubtless, in the proof of the permanence of the existing arrangements of our sun and planets, as given by La Place, the small eccentricities, and inclinations, and masses of the planets were used to make out his demonstration. The second powers of these small quantities were neglected, and thus his equations were simplified so as to become more easily managed and resolved. Since his time, the second powers have been retained, and only the third powers rejected, and the result has been the same. And it is highly probable that the conclusion is independent of the

extreme smallness of any of these particulars, excepting the masses of the planets.

Mr. Lubbuck has presented, more recently, an argument on this subject, independent of the powers of the eccentricities and the inclinations. He has shown that all the perturbations of our system can be developed into a formula depending on the sines and the cosines of certain angles, which extend from zero to three hundred and sixty degrees, and as these sines and cosines pass from positive to negative in every revolution of the disturbing planet, having one maximum and one minimum just equal to each other, so the disturbing influences of one planet upon another, must pass through all gradations, from zero up to its maximum, on one side, and afterwards from zero up to a like maximum on the other side. These effects thus balance each other in the course of time, and are without permanent effect on the system. Thus the acceleration of the moon may go on for ages, but in time the retardation will begin and go through the same variations, until the primitive condition is attained. So the inclination of the equator to the ecliptic, which has been slowly decreasing for more than two thousand years, will, after a while, begin to increase again, and the present varieties of seasons be maintained unchanged till the end of time.

Although the reasoning of Mr. Lubbuck may not prove that the oscillations backwards and forwards of the different elements of the planetary orbits, are confined within narrow limits, merely showing, as it does, that the changes are periodic, like the up and down motion of a pendulum, yet a careful study of the disturbing forces will satisfy any one that the very small masses of the planets, and their great distance from each other, together with the opposite nature of these forces in different parts of their orbits, will be unable, in millions upon millions of years, to change the conditions of heat and cold, or of light and darkness, upon the earth, so as to be inconsistent with the existence or comfort of man, or with any other object of Deity, in the present constitution of nature. It cannot, therefore, be supposed that the arrangements on which the arguments for the nebular theory have been based, were intended by Deity to make our solar system permanent and everlasting.

But a fatal objection to this supposed object of Deity is, that, after all, the system is not stable. The resisting medium, which the undulatory theory of light hypothecates, and which the shortening of the axis of the orbit described by Encke's comet proves to exist, will one day put an end to our system of planets, and bury all in the embraces of our central sun.

It cannot be, therefore, that God has given circular orbits to our planets, hurled them in the same direction and nearly in the same plane, to give everlasting duration to our system, when the

resisting medium would interfere with the accomplishment of his purpose.

This explanation cannot, therefore, be accepted. Nor has any other except the nebular theory been proposed. This alone explains the phenomena. Nothing that we know contradicts it. Having so many characteristics of a true theory, it claims to be received and believed.

It has generally happened in the discoveries of science, that when any truth has been attained by the study of a certain set of facts, it is afterwards confirmed by other facts, either unconsidered at the time, or perhaps then unknown. It is proper, therefore, to inquire whether the nebular theory, founded on the facts we have been considering, has received this confirmation. We answer that it has, and these are not few or unimportant.

1. The general increase of density of the inner over the outer planets. As the heavier particles of the original nebula would naturally descend towards the centre, this result might be expected.

2. The increased size of the outer planets, corresponding somewhat to the large periphery of the ring that was separated from the central nebula.

3. The higher velocity of revolution on their axes that belongs to the larger planets, which is a necessary consequence of the greater thickness of the original ring out of which they were formed.

4. The high temperature of the interior of our earth, as indicated in all artesian wells and deep mines, and also by the hot springs and burning volcanoes, which throw up their heated contents to the surface.

5. The shape of the earth, which bulges out at the equator, and assumes an ellipsoidal form, just as if it had been originally fluid; showing the very high probability that it has not always been solid, as it now is.

6. The like spheroidal figure of the other planets, revealing the same probability for them.

7. The plutonic or igneous appearance of most of the rocks that compose our earth. Its granite, and trap, and basalt, as well as the chrystalline and metamorphic structure of some of its strata, attest the former high temperature of the earth.

8. The immense periods of time required for these changes in the condition of our earth from its primitive form as a heated ring of gas, to its present solid, globular condition, accord very well with the long times demanded for the geological changes that have taken place on the earth's surface.

9. The volcanic, crater-like appearances on the moon's surface, informing us of the high activity of plutonic action there, at some period in its history.

10. The revolution of the moon on her axis, in exactly the same period as that employed in her passage around the earth; which reveals an elongated shape of the moon due to the earth's action on her, when she was once a fluid mass.

11. The rotation of Jupiter's moons on their axes in the same time as is employed in their revolution around their primary, indicating their former fluidity and their subsequent solidification, while under Jupiter's action.

12. The phenomena of Saturn's rings, which are almost exactly similar to the rings which the nebular theory supposes to have been thrown off by the nebulous sun; revolving around the primary in the same time that a satellite would revolve at its distance, just as the nebulous ring must have revolved in the same time that the planets now employ in their orbits around the sun.

13. The probable fluid character of this saturnian ring, as it has been proved by Professor Pierce, that no solid of any shape or density, could retain its equilibrium in this position. La Place had before shown that, if it were a cylindrical homogeneous mass, this stability would be impossible; but Pierce has shown this to be also the case for any other form, unless it were fluid.

14. The probable changes which are now going on in this ring, indicating its possible disruption, and the possible formation of new satellites in our own time. Inside of the ring, which is visible in all our telescopes, there has been recently discovered a dusky, shadowy ring, to be seen only with the best glasses, apparently changing in its appearance and its dimensions, marking the likeness between the saturnian and the nebulous rings in a new and striking manner. So, also, the divisions in the brighter rings seem to be variable, the spaces between them increasing and diminishing, and at times disappearing entirely, indicating the changeableness of the whole mass.

15. The phenomena of variable and temporary stars are indications of changes in the sky, on the same immense and magnificent scale. In a very short period, some stars have first become visible, then grown brighter and brighter, until they had attained the first magnitude, and then gone out in darkness and disappeared forever. In some variable stars, the alterations in brilliancy or of color that have taken place have been probably due to the same cause that has been at work in the temporary stars. These variations imply far greater changes in the heavens than the transformation of our nebula into the sun and his attendant planets.

16. The gaseous nature of the sun's surface, as shown by the difference between the nature of the light given out from a flame, and from a hot, glowing solid, and also by the openings in the burning envelope, when the solar spots are seen, is a decided and complete proof of the nebulous character of the sun. It is a solid, surrounded with gas. The enlargement of the sun's atmosphere,

so as to form the hypothetical nebula, is only a difference in degree, but not in nature.

17. The earth and her gaseous envelope, though this extends only forty or fifty miles, is another example of the supposed nebulous character of the sun in former ages, differing in the magnitude of the atmosphere, but not in its kind.

18. The atmosphere of the other planets, and especially of the asteroids, many of which are much more extensive than the earth's, is another analogy of the same kind as the earth's atmosphere.

19. The zodiacal light, as it is called, which is a thin, hazy mass, extending from the sun in the direction of his equator, as far as Mercury or Venus, perhaps as the earth or as Neptune, and revolving round the sun in the same direction as the planets, and nearly in the same plane, is another nebula existing in our own time, visible to our own eyes, and in almost every respect identical with the atmospherical envelope, which the nebulous theory supposes once to have extended to the outmost planet of our system. In fact, it may be regarded as the uncondensed remains of the original nebula.

20. The recent observations on the zodiacal light, of the Rev. Geo. Jones, seem to favour the existence of a ring round the earth rather than round the sun. This, then, would be the remains of the uncondensed planetary nebula, after its separation from the sun. The earlier doctrine connected it with the sun, the later with the earth; but both are alike confirmatory of the nebular hypothesis.

21. The aerolites that are continually falling on the earth from the sky, and the meteors which nearly every night dart across the heavens, not belonging to our atmosphere, not coming from the moon, but by their great velocity and by other signs showing their cosmical origin, as independent bodies revolving round the sun, are probable remains of uncondensed matter, which once floated with the earth in its revolving ring, around the great central body of our system. This explanation is farther confirmed by the identity of composition between these meteorites and our terrestrial bodies.

22. The large number of small planets circulating between Mars and Jupiter, thirty-five of which have been discovered since the year 1845, and many others yet to be found, when more systematic efforts and more abundant means of distinguishing them from the fixed stars shall be applied to their discovery, present some remarkable and singular phenomena favouring the truth of the nebular theory. This ring may have been of light gaseous materials, which broke up into a large number, hundreds, perhaps thousands of separate masses, many of which are yet surrounded with an immense uncondensed atmosphere. Some gases will become solid by the mere abstraction of heat, but many

refuse to be condensed except by chemical union. Thus, oxygen, which is supposed to constitute one-seventh of the substance of our globe, would not, by mere ordinary cooling, become condensed into a solid. So these numerous small bodies are covered with immense atmospheres of gas that have never been combined and solidified.

23. There is a class of nebulæ in our sky that are called planetary, which are in many aspects similar to the supposed nebula of La Place. They are hazy, of immense size, as large as the orbit of Neptune, faint and dim, so as to be almost infinitely inferior in splendour to our sun. In appearance, size and constitution, they are, therefore, not unlike the supposed early condition of our system.

24. The analogy of Kirkwood, which establishes a relation between the mass distance and time of revolution of the several planets, is not sufficiently well established to be used to confirm the nebular hypothesis. But this, and Bode's law as to their mean distances from the sun, are additional proofs of the oneness of the solar system, and so far favour its development from a single body. Kirkwood's law cannot be tested for Neptune or Mercury, because there are no outer and inner planets to these; for Uranus, because we do not know his time of revolution; for Jupiter and Mars, because the weight of the asteroids is unknown; so that only Venus, the Earth, and Saturn remain by which to try it. For these the law gives results which are approximately, but not exactly true. But, even if it were true of all the planets, it would not become an argument in favour of the nebular theory, except as far as to indicate a unity of arrangement in the system, implying a common origin. If the nebular theory were true, the law of Kirkwood would, like Bode's, be a possible but not a necessary or probable consequence of it.

25. The recent discovery of comets whose orbits are entirely inside of the solar system, overturning the foreign origin of these bodies, and favouring the opinions of La Grange. Those that are a part of our system may thus be readily accounted for by the nebular theory. They are projectiles from the nebulous rings, sent off by internal forces. The directions and velocities necessary to explain their present movements are thus accounted for, and they become confirmations instead of objections to the nebular hypothesis.

These numerous facts harmonizing with the nebular theory, and confirming it, add to its probability, and tend to increase our confidence in its truth. They are, however, weak confirmations, and are far from proving and establishing it.

A serious prejudice against the nebular theory is very common among religious persons. With them it is associated with infidelity and atheism. The ingenious author of "The Vestiges of

Creation" has brought it forward as a link in the chain of events which have been developed from the earliest time until the present, embracing the whole history of the earth and its inhabitants, by the necessary evolution of blind cause, and without the intervention of an intelligent Creator. In this wild philosophy, the doctrine of final causes is repudiated, and all the arrangements of a benevolent Providence by which pleasure, and comfort, and continuous existence are assured to man and animals, are to be regarded as the accidental or necessary consequences of primitive laws and properties imposed on the chaotic atoms at their first creation.

But the evidences of design are so numerous, so striking, and so incontestable, that they declare the existence of a thinking, a planning, and a devising Intelligence in the most unmistakable language. God generally effects his purposes, however, by intermediate agencies, and this is especially the case in dead, unorganized matter. In the living world, and especially for man, religion finds the interpositions of a special Providence, but it is only in miracles that we see God interrupting the energies with which he has endowed matter. These bring about his purposes, and complete his designs without his interference.

If, then, the rains of heaven, and the gentle dew, and the floods, and storms, and volcanoes, and earthquakes, are all the products of material forces, exhibiting no evidence of miraculous intervention, there is nothing profane or impious in supposing that the planets and satellites of our system are not the immediate workmanship of the great First Cause. As the hills have risen on the earth by the aid of terrestrial forces, as miles upon miles of stratified rocks have been deposited by natural agencies, as the ocean has given place to dry land over immense portions of our habitable globe, without any immediate command of Heaven, saying to the proud waves, "Thus far shall ye come, and no farther," so the phenomena of the solar system may have been produced just as well by the natural forces with which God has endowed matter. The earth now runs over her elliptic path under the sole influence of the centripetal and centrifugal forces by which she is acted on; and why may not her present velocity be due to material energies? She revolves day by day on her axis, making the sun and stars to rise and set, under the control of the laws of motion, and why may it not be just as true that the original movement of rotation was an effect of material causes? As every motion of dead matter which comes under our experience, whether the beginning, the increase, or the decrease of velocity, or its gradual, or sudden, or continued change of direction, is the result of natural forces, every thing prompts us to extend these energies to all the motions of matter from the earliest time until now. God has created the world, and imposed on it certain powers of attraction, and repul-

sion, and inertia; certain laws of motion, and combination, and dissolution; and under the influence of these, and other properties and energies, all the phenomena of unorganized matter which come within the experience of man have been produced; and to extend these beyond our experience is in perfect consistence with the whole history and progress of philosophy. In the earlier periods of the world and among the ignorant and uneducated of all ages, a personal God is supposed to be present, energizing every operation of lifeless matter. But all scientific truth and progress is only a history of the disenchantment of nature from the arbitrary interferences of such a superintending Providence. The God is still present; but it is in the operation of unchangeable laws; in the sustaining of efficient energies which he has imposed on the material world that he has created; in the preservation of powers, properties, and affinities, which he has transferred out of himself and given to the matter he has made. Bodies fall in the atmosphere, waves move in the ocean, fire consumes, steam exerts its pressure, hailstones are formed in the sky, floods devastate the plains, the vast earth turns round every day with her rivers and mountains and oceans and dry land, the planets rush forward in their orbits with an irresistible momentum, electricity and light run their rapid courses oves the earth and the heavens; these and all other material effects are produced by material powers; and there is no philosophy of modern times that sees a God immediately at work in the operations of dead and unorganized matter. It is therefore most idle to object to the nebular hypothesis, that it excludes the Creator and Governor of the world from the immediate generation of the circular motions of the planets, or of their daily rotation on their axes.

Some people indeed, regard God as the present actor in all the operations of nature; the apparent powers of matter being nothing else than the regular invariable workings of Deity. Such persons will view the construction of the solar system as God's immediate workmanship, whether it is effected by the exertion of his voluntary activity, or by the intervention of material forces. This may be the true view of nature. But if so, all that is contended for by the nebular advocates is, that the planets and their movements are produced in the second of these two modes of action. They are the production of God by the intervention of material laws and forces, and not by the immediate fiat of his will.

We have now brought together the evidence in favour of the nebular theory, and considered the objections that may be made to it. We have seen that it is a simple hypothesis, and, in this particular, accords well with the mode in which God usually effects his purposes; that it is founded on the supposed existence of a gaseous body very similar, though not identical, with other bodies which we know to exist; that it explains, in a plain and

simple manner, a very large number of facts which had not before been accounted for; that it is the only supposition that has been brought forward that explains these facts; that it is contradicted by no phenomena that have been observed; that it is in harmony with a large number of other facts, having no intimate connection with the hypothesis; and that the objections to it by religious persons are founded in prejudices and errors.

After all, can this hypothesis be considered as proved? By no means. That it satisfactorily accounts for many phenomena which are too numerous and regular to be the result of accident, neither amounts to demonstration, in the mathematical meaning of that term, or in the looser sense in which it is sometimes used. The nebular theory cannot be ranked as one of the truths of astronomy, which rises above every other science in the accuracy and certainty of its doctrines. Nor can it claim the confidence or steady belief that we often have for laws or properties relating to the ordinary phenomena of matter, which, though unproved, may have a strong probability in their favour. Referring, as it does, to times long past, before man had his birth, before the first trace of animated life appeared on our globe, before the rocks were stratified, or the hills formed, or the solid earth, or the floating waters had their being, not merely six thousand years ago, or six thousand millions of years, but earlier still, our knowledge of that primitive chaos, and how it was produced and transformed, and what was the antecedent condition of that primeval matter, as it first came from the hand of its Creator, must, of necessity, be vague and uncertain. The most that can be known will not raise more than a slight probability in its favour, sufficient to create a weak belief. Assurance or confidence would be unworthy of the scientific philosopher, who demands the strictest logic and the most painstaking investigation, before he forms his opinions or is satisfied with his conclusions. The vulgar and thoughtless, the bold and sanguine, may indulge in stronger faith, perhaps in unwavering conviction; but such a trust is unworthy of a scientific, well-educated, well balanced mind. A belief in the hypothesis, a preference for it to any other suppositions that may be made, a leaning towards it as an ingenious, plausible, and probable mode of accounting for many facts of which our natural curiosity prompts us to seek an explanation, is the only state of mind which the true spirit of philosophy would authorize and approve.

Art. VI.—THE WORKS OF WILLIAM PALEY.

The Works of William Paley, D.D.; with a Biographical Sketch of the Author, by the Rev. D. S. Wayland, M. A. London: George Cowie & Co.

Few authors in modern times have attained the celebrity of Dr. Paley. He has addressed himself to topics of permanent interest, unlike many others who waste their energies upon subjects of fleeting and temporary importance. The very nature of such inquiries, therefore, is apt to secure a fair measure of attention, if one brings to the task unusual diligence, and something more than ordinary ability. Questions of morals appeal to the best part of our nature, and the good and reflecting can never be indifferent to a fair and honest discussion of them. It is the religious element in man which imparts to him his true dignity; and, without intending to detract from the value of other investigations, certain it is, we think, that the problems concerning it have, in all ages of the world excited the deepest interest, and awakened the profoundest and most searching speculations. Few men in modern times have laboured in this field with a success equal to that of Dr. Paley. The history of morals and of Christianity cannot now be written in justice, with the omission of his name. He is permanently connected with their progress, and, whatever may be the truth of some of his doctrines, most certain is it, that he has exhibited them with peculiar force and perspicuity, and that he has largely contributed to illustrate and impress others, which are universally regarded of paramount importance. Though all accord to him eminence as an author, the opinions as to his precise merit, have been unsteady and fluctuating. He belongs to a great school of philosophy, and takes rank for the time, accordingly, as the fundamental doctrines of this school are or are not in the ascendant. We see him at one period, hailed as the great modern expounder of moral and political truths; as the man who has done more to disseminate and give them efficiency than all the world besides; while, at another, he has been decried as utterly wanting in a talent for severe and philosophical investigation; as being the defender of doctrines of the most pernicious nature, and which, if pushed to their legitimate consequences, would undermine the foundations of morality, and remove the only sure basis on which society can rest. Neither of these views are correct. If it be true that some of Dr. Paley's works are faulty for their unsoundness of principle and of doctrine, it is alike true that others have most extraordinary merit, and have never been excelled, if equalled, in their particular department. Many of his critics have been guilty of the injustice of condemning him in toto, because of his "Moral

and Political Philosphy," forgetting that even *it* contains the most important truth, and that he is the author of other works, which are distinguished for the soundness of their principles and the severity of their logic, and which have rendered the most essential service to the cause of Christianity. In this article it shall be our purpose to notice, very briefly, the principal books of our author, and endeavour to estimate their relative value. But, before we proceed to do this, we will present a biographical sketch to the reader, which, we trust, will not be uninteresting.

William Paley was born at Peterborough, England, in July, 1743, and baptized on the 30th of the following month. His earlier years afforded no indications of genius. But, though there was nothing brilliant, nothing precocious, let it not be supposed that there was any deficiency of natural capacity. Indeed, there is every reason to believe, that, while indulging in that corporeal indolence to which he seemed to be constitutionally subjected, his mind was active, and he converted his hours of idleness to occasions for meditation, and for the acquirement of useful knowledge. Like some great men, and unlike other great men, he was fond of angling. This would prove, that the fact was not worthy of mention, were it not that his biographer has spoken of it as an amusement of which he was very fond in his after life, and that "the time was far from being lost." Even when a boy, he exhibited great earnestness in the pursuit of truth, whether scientific or moral; preferring such inquiries to classical studies, though his education in this latter particular was not neglected. He evinced an early taste for mechanics, and this feature of his mind was fully displayed, and turned to useful account in some of the books which have given to him his highest reputation. In his fifteenth year he was taken to Cambridge, and admitted a sizer of Christ's College, on the 16th November, 1758. Paley was accompanied by his father to Cambridge, and he describes their journey. If the incident which it is our purpose to record, is insignificant and ludicrous in its character, let it be remembered, by way of apology, that such little things unite *greatness* with a more common humanity, and have a tendency to produce a more general contentment, by furnishing occasions on which we humble mortals may lay claim to superiority. "I was never a good horseman," says Paley, "and when I followed my father on a pony of my own on my first journey to Cambridge, I fell off seven times. I was lighter then than I am now, and my falls were not likely to be serious. My father, on hearing a thump, would turn his head half aside, and say, 'Take care of thy money, lad.'" Paley was always a bad horseman, and whenever he had a companion, would never suffer him to converse with him; always checking him, when necessary, with the remark, "Pray do not talk to me till we get home; I can only do one thing at a time: it is quite enough for me to ride."

According to Paley's own account, the first two years of his under-graduateship were spent happily, but unprofitably. One of his companions aroused him from his indolence at the commencement of his third year; and entering upon habits of the most severe study, on taking his batchelor's degree, he became a senior wrangler. In 1765, he entered the lists with the senior bachelors, for one of the prizes adjudged by the University to the two best dissertations in Latin prose. He was successful. In 1766, he was appointed to a fellowship in Christ's College, and returned to the University. At this time, he undertook the office of tutor in conjunction with Mr. John Law. In 1774, Mr. Law resigned the office of tutor, being advanced to a prebendal stall, and in 1775, Paley was instituted to the rectory of Musgrove. This was soon followed by the addition of the vicarages of Dalston and of St. Lawrence. We have traced our author through his life in the University and in the College, and we see him now about to assume the duties of a parish priest. His preparation had been ample. He had left a good reputation at Cambridge; he had formed habits of study and meditation, and he entered upon his work with pleasure, with earnestness, and with confidence. In 1785, he published the "Principles of Moral and Political Philosophy;" the first in the series of works which has given him such wide reputation. In 1790, he published the "Horæ Paulinæ;" in 1795, the "Views of the Evidences of Christianity;" and in 1802, his last great work, the "Natural Theology." His health was now rapidly declining; his system had received a severe shock in the year 1800, and the composition of his last work added to his infirmities, and, no doubt, cut short his useful life. He died in 1805, on the 25th of May, and was buried in the cathedral church of Carlisle. In his death, he exhibited a perfect resignation to the Divine will, and found relief from the agonies of disease, in the blessed promises of that Gospel, which, in his day, he had contributed so much to confirm and to establish.

The science of ethics at all times has had attractions for men of genius and reflection. It had a large place in the philosophy of Greece, but moral controversy seems to have begun with the Epicurean and Stoical schools. What is moral science? A very ancient division of the sciences was into the physical and moral. Though these terms are perhaps sufficiently definite, and may be well enough discriminated, they are not exhaustive of the objects of knowledge, and the division must be regarded as incomplete. The foundation of moral science is laid deep in nature. All men have a common constitution, and whatever may be the diversities of their condition, they *approve* of some things, and *disapprove* of others. The right and the wrong are faintly perceived at least, by the rudest and most ignorant of our species; and, in regard to the

particular elements which make up a good or a bad character, there is everywhere a remarkable agreement. It is not going too far, perhaps, to assert, that all the systems of virtue and morals which have been given to the world, have something of good in them. The great difference between them is, that some proceed upon wrong principles, have incorporated in them more error than others, and thus present, in this respect, a very partial and incomplete view of human nature. But, even in the worst of them, truth may be found, and they may be studied to advantage. They are all based upon some one natural principle or another, and a true system is to be constructed by a comprehensive survey of the whole. In treating of the principles of morals, there are two questions to be considered: first, wherein does virtue consist? or, what is the tone of temper, and tenor of conduct, which constitute the excellent and praiseworthy character? And, secondly, by what power or faculty in the mind is it that this character, whatever it be, is recommended to us? Why, in other words, the mind pronounces one tenor of conduct right, and the other wrong; considers the one as the object of approbation, honour, and reward, and the other of blame, censure, and punishment?* These questions have been answered in different ways in the various systems of philosophy to which speculation has given birth, in ancient and modern times; and to some of these it is our purpose now to make a brief allusion. The various schemes of morality may be reduced to two, with several subdivisions: first, that which regulates human action by some internal principle; second, that which regulates it by something external to the mind. The first is called the scheme of *independent* morality, the last the scheme of *dependent* morality. The one embraces all those systems which make conscience, the moral sense, reason, rectitude, etc., the governing principle, while the other comprehends the systems which are based upon pleasure, utility, the greatest happiness of the greatest number, etc. Both of these schemes are hinted at by the ancient philosophers, though the latter was most prevalent.

Plato taught a sublime morality; he was in the pursuit of the "beautiful," embracing under that term all that is true, all that is wise, all that is good; he was in search of the highest beauty, of beauty as it exists in perfection in the Eternal and Infinite Mind. Virtue is that state of the soul in which all the powers and principles exist in harmony; the passions being subordinated to the reason, and each element of our nature having a subsistence only in its due proportion, and exerting its lawful influence without encroaching upon the domain of any other. Virtue, then, is a state of peace, while in vice discord reigns from the fierce struggle

* Vide Smith's Theory of Moral Sentiments, part vii., sec. i.

of contending passions, and all is anarchy and confusion. This happy state begets the feeling which he has characterized as "love," and which, embracing all the benevolent affections, carries us from the objects of sense up to the highest and sublimest conceptions. These doctrines of Plato were enforced in his dialogues with an eloquence and beauty of illustration which have attracted the admiration of all ages. The wisest among the ancients have done homage to his genius, and the moderns point to him as unsurpassed by any of the bright galaxy of Grecian or Roman sages. Mackintosh remarks, that perhaps an eye trained in the history of ethics may discover the germ of the whole, or of a part of some subsequent theory; but that this is not to look at it with the eye of Plato. He employed every topic without regard to its place in a system, or even always to its argumentative force. It will be remembered that Plato gives to reason a rightful authority over the desires and affections; and Butler has at length insisted upon the doctrine. We have, then, to ascertain the right, and the moral obligation to do it is imperative. Here, then, is a great principle, which will furnish a rule for moral action, and which will serve as a foundation for a system. But we must leave Plato, and say a word of Aristotle. As widely different as they were in the character of their genius, and in their intellectual labours; as true as it may be that they stand out from the mass of heathen sages as types of respective schools of philosophy, yet both alike took ground against the Sophists, in defence of the Rule of Life. "In ethics, their systems differed more in words than in things. That happiness consisted in virtuous pleasure, chiefly dependent upon the state of the mind, but not unaffected by outward agents, was the doctrine of both."* It may be that they differed more in words than in things; and yet, in the opinion of many, Aristotle made virtue consist in practical habits, while Plato believed that the convictions of the understanding, in respect to what was proper to be done or to be avoided, were alone sufficient for a perfect virtue. The moral systems of Epicurus and Zeno seem to be rather more clearly defined, than those of the great men to whom we have alluded; and about a century after the death of Plato, moral discussion may be said to have begun among the Epicureans and Stoics. The system of Epicurus was based upon the principle, that bodily pleasure and pain were the sole, ultimate objects of natural desire and aversion. It will at once be perceived that this principle is in striking contrast with the principle of Plato; and that it may be pushed to the most pernicious and demoralizing consequences. And yet he was pure in his life, and never designed the encouragement of vice. He fixes his

* Vide Mackintosh, Progress of Ethical Philosophy.

philosophy in the earth—grounds it in sense, in the body, with its gross appetites and passions, which are constantly seeking for gratification, and thus represses those earnest aspirations after something higher, truer, and nobler, which gave to the conceptions of Plato such imposing sublimity. We have previously remarked, that there is something of good in every system, and we have here to add, by way of illustration, that the philosophy of Epicurus, which is generally known only in its horrid development, and whose founder has become a by-word and a reproach with the multitude, actually enjoins, as a fundamental canon, "that we cannot live pleasurably without living justly and virtuously, and live justly and virtuously without living pleasurably." The systems of Epicurus and Zeno were rival systems. Zeno is known as the author of the Stoical system. Perhaps they have never been better discriminated by any modern author than by Dugald Stewart, in his Philosophy of the Active and Moral Powers of Man.

In the tendency of the Stoical philosophy to encourage the active and social virtues, it was most remarkably distinguished from the system of Epicurus. The latter indeed seems, as it was first taught, to have been the reverse of that system of sensuality and libertinism, to which the epithet Epicurean is applied in modern times; but, at best, it was a system of selfishness and prudent indulgence, which placed happiness in a seclusion from care, and in an indifference to all the concerns of mankind. By the Stoics, on the contrary, virtue was supposed to exist in the affectionate performance of every good office towards their fellow creatures, and in full resignation to Providence for everything independent of their own choice.* Both alike were founded on the false principle of *self-love;* but the self-love of the Stoic was so applied as to be expansive in its action, and therefore noble in its character. It stimulated man to the most energetic virtue. The virtues, according to the Epicureans, were not lovely in *their own natures*, and therefore to be desired on that account, but they were to be sought and practised simply upon the ground that they helped us to attain the objects of our natural desires. The Stoic placed the sovereign good in virtue alone, and aimed at a perfection which is absolutely unattainable. Well may it be regarded as a philosophy of a noble type; and enjoining, as it did, the most rigid observance of all the virtues, whether in private or public life, it is not to be wondered at that it should have received the praises of the best men of antiquity, and that even the moderns should look upon it with forbearance and admiration. We might here speak of the Peripatetic school, but we conclude this part of our subject with the remark, that all the leading sects, in their first

* Vide Stewart, vol. v., book iv., chap. iv.

estate, insisted upon morality, in some form or another, as necessary in the pursuit of happiness; but it is the merit of the Stoic alone to have maintained, that the love of virtue was, *in itself*, *happiness*.

We are indebted to the philosophical works of Cicero for our knowledge of the ethical systems of Greece. It is quite probable that the human mind, unassisted by light from heaven, could never have made better progress in constructing a theory of morals. In reading the record of Cicero, we are sometimes almost unmindful of the fact, that we are in the presence of heathen philosophers, and, for the moment, are inclined to fancy that we sit encircled by the full blaze of Christian truth. It is not matter for surprise that none of these systems are perfect; that they contained within themselves the seeds of dissolution. With all their defects, they must ever remain as among the highest records of genius, the richest offerings of intellect. Though we may find in their speculations, glimpses of almost every moral truth, yet we may say in general of them, that they are fragmentary in their character, and want the cohesiveness of system. They needed the support of an eternal, self-sustaining principle, and, in the conflict of opposing opinions, were destined to undergo the most important changes, and to be subjected to the grossest abuses. This is true of all alike. Even the divine philosophy of Plato was corrupted in his own academy, where he had so long enforced its heaven-born precepts, and a revolting skepticism in reference to morality itself, was made to pervade the minds of his followers. The pure teachings of the Stoic were deformed by the notion on the subject of voluntary death; and though suicide was tolerated in all the schools of ancient philosophy, yet the Stoic alone may be said to have impressed it with the earnestness of a fundamental doctrine. While men were urged to perfect contentment with the alotments of life, to perfect resignation to the Divine will, with singular inconsistency they were told that they could retire from the present world whenever they pleased; that they had the power in their own hands, and that it could be exercised at their own discretion. Though, as we have already said, Epicurus was pure in his life, the false principle of his system led to indolence, luxuriousness, and, finally, to great dissoluteness, which were fully exemplified in many of his disciples.

That there was much that was pure, much that was noble, much that was manly in the ancient philosophy, none can doubt; and, in certain respects, it contrasts favourably with many modern systems. We turn over the pages of the great heathen sages with a mingled feeling of admiration and regret; of admiration, because so much was accomplished by the unassisted reason; of regret, because of the gross errors and delusions which stand out so prominently from the groundwork of their most sublime speculations. Though in Plato, in Cicero, and in Seneca, we see

occasional passages which approach a just conception of the Divine nature, yet, after all, how vast the difference between the God of the Bible, and the god of the most enlightened period of antiquity! The Peripatetics had nothing to do with divine things; the Academics, in the amplitude of discussion, embraced everything, but believed scarcely anything; the Epicureans withdrew their gods from all connection with the affairs of men; and the Stoics, the noblest of all of them, while acknowledging the existence of a great Divine principle, superadded an infinite number of other gods. This great principle was of the nature of fire, and revolved in eternal cycles. We will not pursue this god of the Stoics any farther. It was the most perfect god of the ancient philosophy, and produced a theology full of the most blundering errors and absurd superstitions. But we close our notice of these speculations. They have value in themselves, but they derive additional interest from the fact, that parts of them at least survive in modern systems, and that the good and the bad are alike to be seen in the speculations of our own day.

It is high time, perhaps, for us to proceed to our author, whose works it is our special object to notice. And, first in order, comes his Moral and Political Philosophy. Before we do this, however, we think proper to allude to the state of the science in England. Perhaps in no other country in modern times, have moral and political inquiries been pushed with such zeal and success. Moral discussion commenced with Hobbes, and the two great parties of Dependent and Independent moralists engaged in a fearful and bitter struggle, which, continuing for centuries, has been protracted to our own times. To a mind of wonderful acuteness, a logic the most refined and subtle, a genius eminently comprehensive and systematic, he added a courage, a dogmatism, and an ardour which nothing could subdue, and a precision, and perspicuity, and power of style, which elevates him to the rank of the first classics of his own language. No wonder that such a man should give a new character to philosophy, and impress himself upon generations to come. He based his system upon no new principle; self-love was the foundation of all morality. We look with approbation upon actions which are beneficial to society, because they promote, at the same time, individual interests; and the laws, which are enacted by the civil authority, become the standard of morality, because to government "we look for all the comforts and confidence of social life." These notions are not peculiar to Hobbes. It has been well remarked, that similar opinions have been entertained in all ages by those writers who wish to flatter tyrants, or who have a secret bias to atheistic and Epicurean principles. No work in modern times, perhaps in any time, created a profounder sensation than his Leviathan; and no man was ever more honoured by the character of his antagonists. Among these may be mentioned,

as the most distinguished, Cumberland, Cudworth, Shaftesbury, Clarke, Butler, and Hutcheson. It is not necessary for our purpose to mark the peculiarities which distinguish the moral speculations of these renowned writers; they were all opposed to Hobbes on some ground or another, and, in their measure, deserve credit for having contributed to arrest the mighty flood of error, which under the name of *Hobbism*, was overspreading all Europe, and substituted for it a higher and more elevating philosophy. We must allude, however, to some of the services which they rendered. For the details, we must refer those who have interest in ethical inquiries, to the works themselves. Hobbes insists that the ideas of right and wrong are derived from positive institution, and that we cannot antecedently form any conception of them; while Cudworth, disclaiming all such foundation, regarded these ideas as ultimate facts, and incapable of analysis. Being an advocate of *independent* morality, he looked within for the principle which regulates moral distinctions, and thought that he found it in the reason. Virtue, then, according to this view, "consisted not in obedience to the law of a superior, but in a conduct conformable to reason." With the view of more clearly comprehending our author's meaning, it is well to call attention to the fact, that the term *reason* may be understood in two very different senses. Sometimes it is used for the power concerned in argumentation, drawing conclusions from premises; at other times, to express our whole intellectual being. In this latter sense, it seems to have been used by Cudworth, and the writers of that school. Whether Cudworth deserves the censure of having fallen into gross theological heresies, we will not undertake to decide. His speculations are replete with the spirit of Plato, and he consecrated his life to the maintenance of the doctrine of a Divine Providence. His fame rests mainly on his Treatise concerning Eternal and Immutable Morality. In this work, he places reality, truth, not on the unstable ground of the senses, but on the sure basis of an inward principle. Many of our ideas, he teaches, are derived alone from the inherent energy of the mind itself. Insisting upon the eternal and immutable nature of truth in general, he applies the doctrine to the particular case of moral truth, and concludes that morality, ethics, politics, and law, have a real and substantial nature; "not less so than those things which belong to stupid and senseless matter."

In taking the most cursory notice of the history of morals in England, it would not be proper to overlook the name of Locke. Though his labours were mainly devoted to intellectual philosophy, as distinguished from moral philosophy, yet these two departments are so intimately interwoven as to be inseparable. He has been assigned a position as an ethical writer, and his high authority has been brought to the support of one of the two schools into which the world is divided. He belongs pre-eminently to the school of sensa-

tional philosophy; and, though aware of the controversies in respect to his teachings, we feel no difficulty in coming to the conclusion, that he eschews the doctrine of independent morality, and that his great power has been brought to the support of the opposing system. Passages may be found in his great work, which may be turned to account on either side: this might prove his inconsistency; but there can be no doubt of the general tendency of his speculations, and they approach much nearer the principles of Hobbes than of Cudworth. Clarke belongs to the other school, that is, the school of independent morality. He teaches the eternity of all relations, and the eternity, therefore, of moral distinctions. These eternal relations carry with them obligation, and enforce a particular course of duty growing out "of fitness or unfitness in the application of things one to another," and "which is separate from the will of God, and antecedent to any prospect of advantage or reward." But ethical philosophy was now to receive a strong impulse from the hands of Shaftesbury and Hutcheson, and the school of Cudworth and Clarke to be partially obscured. Hutcheson was a follower of Shaftesbury, and they laboured to find some other foundation for the morality of actions than their conformity to reason. This basis was found in what is called "the moral sense," a term introduced by Hutcheson, in his writings upon the subject. This moral sense was designed to take the place of reason, and the other principles of the independent moralist, and recognizes, therefore, the eternal and immutable nature of moral distinctions.* Of the errors of this school, of the *degradation* of the reason to a level too low for the exercise of its rightful authority, it is not our purpose to speak. Upon the whole, moral philosophy received at their hands an upward tendency, and had imparted to it no small measure of certainty and stability. The profoundest and most philosophical of all the ethical writers of England, is Bishop Butler. Though no little indebted to Shaftesbury, by common consent he is regarded as having contributed more to the foundation of a just system of morals, than any other author in modern times. In his Dissertation on the Nature of Virtue, appended to his Analogy, he insists upon "a moral approving and disapproving faculty," which he adds, we experience in ourselves, and recognize in each other. He declares that men proceed in their conduct in life, upon the supposition of such a faculty, whether it be called conscience, moral sense, moral reason, or divine reason. He considers its functions, its objects, and declares the mode of its operation, and urges its rightful supremacy. His celebrated remark concerning

* It is a little remarkable that Shaftesbury, who based his philosophy on a sound principle, became an infidel, while Locke, with the disadvantage of a wrong foundation, was a Christian.

it—"Had it strength as it has right, it would govern the world"—is the key to his whole system. Butler takes his place among the defenders of the scheme of independent morality, notwithstanding the opinion of some to the contrary; an opinion which is probably due to his avoidance of well-settled, philosophical language, and to a style which was commonly reproached, in his own day, for its obscurity; and in reference to which Mackintosh remarks, "that no thinker so great was ever so bad a writer."* In this hasty glance at the history of moral discussion in England, we cannot mention the names even of many who played an important part, and whose works have added largely to the intellectual glory of the country. Hume, however, cannot be entirely passed by. Few men have possessed minds of equal logical acuteness, and so well fitted for philosophical investigation. But, however much we may admire his noble genius, and his almost unsurpassed powers of reasoning, still his ethical discussions terminate in a cold and forbidding morality, and remove all the foundations of truth and knowledge.

Adam Smith, Berkeley, Price, Hartley, and Tucker, all made contributions of more or less value, and impressed themselves upon the age in which they lived. But we have reached the period of Dr. Paley, and, having said enough probably to indicate the condition of moral science as he found it, we proceed now to a brief notice of his system as developed in his Moral and Political Philosophy. We shall not attempt to defend the principle upon which he grounds all morality; but we may be permitted to say that in this work, he has been treated by his critics without mercy, and condemned without benefit of clergy. Well may we say of it what Warburton said of Hobbes' Leviathan, that the answers to it would form a library.† The objections to his system of moral philosophy are obvious and numerous. From Mr. Gisborne, who published his critique on Paley in 1790, through the long line of ethical writers to the present day, these objections have been repeated over and over again, until they are familiar to the minds of most of our readers. It is not necessary therefore, we conceive, to present them at length, and we will content ourselves with the suggestion of some of the most prominent, putting in a plea now and then for him, when we think that he

* The sermons which he preached at the Chapel of the Rolls contain most of his ethical discussions.

† A leading idea of the book, is to join moral and political philosophy together; to add a book of politics to a book of ethics. It is, therefore, a work on political ethics. He regards political philosophy as, properly speaking, a continuation of moral philosophy, or rather indeed, a part of it. General rules are alike demanded by the conscience, whether to guide the conduct in private life, or to determine action in a citizen of the commonwealth. The principles, the rudiments, are the same, and a separate work would have involved an unnecesary repetition.

has been treated with undue severity, or that his principles have been pushed beyond the limits which he at least designed. Paley's system is a modified Epicureanism. He seems to claim for the body, for the animal constitution, a dignity and importance but little inferior to the rational part of our nature. He bases his philosophy on the principle of *utility*, which he makes the measure of all moral rules. From this principle, he deduces all the arguments for our duties, and determines our conduct in cases of casuistry, when, from the conflict of opposing opinions, and the necessary obscurity in the application of rules, it is difficult for the mind to come to any determination. His principle, under certain limitations, is sound, and his error consists in making it the basis of all moral distinctions, the ground of all moral obligation. Whewell remarks that, had he kept it in its due place, moralists of all shades would have received his work with pleasure, as all agree that sound morality is invariably the road to the greatest general good. It is in the speculative part of his work that he blunders most; it is when he attempts to assign reasons for his moral rules, to mount up to principles, and to construct a system. When Paley rests his system upon expediency, he rests it upon a foundation which can avail nothing, as, from the nature of the case, there must be a difficulty, nay, an impossibility, in applying the principle. "Virtue, as defined by him, is the doing good to mankind, in obedience to the will of God, and for the sake of everlasting happiness." Nothing is virtuous, then, which is not done for reward, and its exertions are restricted to others, keeping out of view those duties which we owe to God and to ourselves. Vice is the opposite of virtue, and it follows, by the terms of the definition, that "whatever is not done for the sake of the agent's happiness is vicious." Our author is inconsistent here with his own scheme, which we know embraces the duties to God and to ourselves. Much has been said, too, against the notion, that "obedience to the will of God" enters into the idea of virtue; forms a necessary part of it. Most true is it, that He wills the doing of good, and that he has made the richest promises to his creatures; and most true also is it, that none can share the promises who live in violation of his commands. He is strictly a God of virtue, and can never command its opposite. The will is his will, the command is his command, and he is in the exercise of a rightful authority. These would seem to be truisms which none can dispute, and which should satisfy the most sensitive morality. But God has bound by the closest union, the obligation arising from the nature of virtue itself, and the obligation connected with his commands; and "what he has joined together, let no man put asunder." Paley dissolved the bands, proclaimed a divorce, and thus aimed a blow at a necessary and eternal connection. He took the position, that "we are obliged when we are impelled by the will

of another; not, as hitherto, where we are commanded by him whose commands we know to be right, but by the will of *another—any other*—for example, any candidate who canvasses us for a vote."* This, probably, is pushing his philosophy to an extreme which he would not sanction; but it is one of a thousand examples in the history of systems, which will serve to show the danger of an erroneous principle, and the absurd consequences to which it may lead. But we acquit Paley of the licentiousness and immorality which his high authority is made to prop and support. The guards which he threw around his principles were designed to protect them against abuse. They were removed by men who styled themselves his disciples; and thus the principles themselves were permitted to work out their results, with maddened and unbridled fury. Let it be remarked that the various principles of reason, moral rectitude, conscience, expediency, or general utility, are all entitled to a place in a system of morals; and the aim is, not to exclude any of them entirely, but to adjust them in their proper proportion. Many writers, in their zeal against our author, would banish the idea of utility altogether from the human mind, and brand him as of low ambition, "who would give it entertainment." There is no doubt, that a just indignation at the extent to which the utilitarian principle has been pushed in the various departments of exertion, has produced a reaction in favour of a higher philosophy, which, in some instances, has exceeded all proper limits.

In considering the proposition, that it is the utility of any moral rule which constitutes the obligation of it, we must not pass by the objection that "many actions are useful, which no man will allow to be right," and the answer which Dr. Paley makes to it. It may be said, that there may be occasions in which the hand of the assassin would be very useful; as the present possessor of an estate may employ it to annoy, corrupt, and oppress all about him, and his estate would devolve, by his death, upon one of an opposite character. Here our author would have us to look at the act, not in the light of the *particular* consequences only, but of the *general* consequences, which is of more importance. And from the consideration of the *general* consequences, it must be condemned, as it involves the violation of a necessary and useful general rule. Now, how Dr. Paley can get his general rule from his premises, is another question, with which we have nothing to do. He assumes that the moral government of the world *must proceed by general rules*, and these general rules he makes co-extensive with human action, and regards them as necessary in any dispensation, whose object is to influence the conduct of reasonable

* Whewell's History of Moral Philosophy.

creatures. They are equally stringent and obligatory, whether we consider *secret* or overt acts of sin, and in this light crime is *always crime*, has always the same nature, and deserves punishment, whatever may be the special, particular consequences by which it may be distinguished. We have further to remark, that Dr. Paley *offers* his principle of general consequences as a guide, an infallible guide, to human conduct; and he aims to give to it all the authority, supremacy, and certainty which would attach to conscience. We will not say that he has given us a safer and better guide, for we think otherwise. There are no sanctions as clear, as satisfactory, as potential as the sanctions of conscience, or the moral sense. We must do the right for the right, without regard to any consequences whatever. In the highest exertions of the virtuous energies, the idea of happiness even is not permitted to enter. Paley, then, is in the wrong. There is a principle of *duty* which lies deep in the conscience, a law of moral rectitude, an approving faculty, which sheds abroad upon our minds a sense of peace in the case of good actions, independently of all experience, and of the calculation of the remote consequences of conduct. This is a shorter, more direct, more certain, and more practicable process, and which, in every age and among every people, has had a felt existence. Under this sanction of an approving conscience, we must do our duty, and leave the consequences to God. After this distinct declaration of our preference, we must give the opinion, that Dr. Paley, by the introduction of his principle of *general* consequences, relieved the system of utility of many of its revolting features, and that he *believed* he had made ample provision for the exercise of the highest and most disinterested virtue.

The part of Dr. Paley's work which is regarded as most objectionable, is his denial of a *moral faculty;* of a power in the mind different from all others, whose authority is supreme, and which constitutes the governing principle of human conduct. The advocates of the selfish system, it will be borne in mind, resolve the sense of duty into a regard to our happiness; thus confounding things which are entirely different in their nature, however true it may be, that, in point of fact, they go generally together. Every one knows, that to address one's sense of duty and to address one's interest, are not one and the same procedure. By an appeal to the former, the good man will be controlled even against his interest; while he who is governed habitually by the latter, by the common sentiment of mankind, is looked upon as low and degraded. That we have the ideas of right and wrong antecedently to all positive institutions, and independently of all regard to consequences; that these ideas have to be passed upon by the moral faculty, whose office it is to determine betwixt them, are fundamental and primary cognitions, given to us in consciousness,

and which must defy all attempts at contradiction. That they have been denied should excite no apprehension, for no form of truth has been safe from assault. Its enemies live in every age, are always on the watch, and, with daring intrepidity, attempt to force an entrance into every gate of the temple, that they may sack and plunder it. Whatever may be the subtle reasonings, the refined speculations of system-makers to the contrary, we assert broadly, that men have felt at all times, that there was such a thing as a moral faculty, a conscience. It has always uttered its potential voice; but they have busied themselves in the invention of excuses for turning away from its admonitions.

We will not give the argument in favour of the existence of the moral faculty, as it is not necessary for our purpose. Bishop Butler has done this with a power and energy unknown to former writers; though we had the most striking descriptions of its supreme authority, by some of the ancient moralists, and by some modern authors who preceded him. We take its existence for granted, and have to deal with Dr. Paley for his denial of it. In his fifth chapter he discusses the subject, and gives the reasons for his opinion; but it is manifest that he misstates the question. He ascribes to the defenders of the doctrine of innate principles, notions which they never held, and, losing his accustomed perspicuity, confounds together systems which are dissimilar in their nature. His argument is levelled against *instincts* generally, and this he styles the moral instinct. That there is a moral instinct at work in the minds of men, he admits; but in accounting for its genesis, he finds ample cause in the powers of association and of imitation. Paley was educated in these notions; it was the philosophy which was forced upon him; it was the error of his youth; but, according to Stewart, "he made ample atonement, by the ingenuity and acuteness with which he combatted the reasonings, employed by some of his contemporaries to invalidate the proofs afforded by the phenomena of instinct, of the existence of a designing and provident Cause." Whatever may be the faults of his speculative opinions, his system is a system of Christian morals. His great errors are found in his analysis of moral obligation, his denial of a moral faculty, and his substitution of a principle which founds morality on consequences. The world of modern philosophers is pretty well united in the opinion, that, in these respects, his system is vicious; but let us not be blind to the truths which it exhibits, the sober lessons which it inculcates; and, above all, let us not make it the occasion of wantonly charging heresies upon him, which his life and his works so plainly contradict. A living author of high repute, Lord Brougham, will not charge him with *materialism*, but expresses a doubt "whether he was fully impressed with the evidence of mental existence." Rather would we join in the sentiment with which Whewell concludes his notice

of the Moral and Political Philosophy, that he is an admirable and instructive writer, who has directed practically aright an immense body of readers; and look up to him with gratitude, for many most valuable services to the cause of religion and virtue. Because of our author's speculations on the subject of conscience, some of his critics affect to come to the conclusion, that *he had no conscience;* and they find a confirmation of this in the story told on him, that he once said, "he could not afford to keep a conscience." It is a matter of no consequence to us, whether he ever said it or not; for certain is it, that if he gave utterance to such words, he was in jest; and many a parson have we known to utter jests fully as serious, without, we think, being any the worse for them. But, leaving Paley as the author of a system of moral philosophy, and looking at him as a minister of God, labouring under a deep sense of the awful responsibilities of his position, all doubts as to his opinion on this subject vanish into thin air. His volume of sermons is full of the most explicit testimony to the existence of a conscience, with all the high functions which are claimed for it. We shall content ourselves with two passages. The first is taken from his sixteenth sermon, entitled Insensibility to Offenses, and is in these words: "How well does the Scripture express the state of an habitual sinner, when it calls him 'dead in trespasses and sins!' His conscience is dead; that which ought to be the living, actuating, governing principle of the whole man, is dead within him; is extinguished by the power of sin reigning in his heart." In his twenty-fifth sermon, on the Influence of the Spirit, we find the following passage: "It is through the whisperings of conscience that the Spirit speaks. If men, then, are wilfully deaf to their consciences, they cannot hear the Spirit."

After all, is it not certain that Dr. Paley never designed to make *expediency* the rule of right, except in those cases where the Scripture had not spoken? They who make him maintain the exclusive and supreme authority of this principle, have a show of reason for it in certain passages of his book, which are not only contradictory of others, but flatly opposed to the general scope and tenor of his argument. It is true, he asserts that "the utility of any moral rule *alone* it is which constitutes the obligation to it;" yet, everywhere, he recognizes the paramount authority of the Scripture. He was in love with his system; and, anxious to magnify its importance to the utmost extent, he seems sometimes almost to forget that there is any higher authority, and makes his favourite principle coextensive with moral obligation. He is concerned in finding the rule *by the light of nature*, in those cases where the *Scripture is silent;* and it is under this limitation he asserts that actions are to be estimated by their tendency. The idea of laying the foundations of morality, without the sanctions of the Christian religion, he everywhere repudiates; and he charges

expressly the grossest inconsistences upon those who receive Christianity, and yet endeavour to keep it out of sight in their reasonings concerning human duty. He unites ethics with the Christian theology, and pronounces the Principles of Morals, by Hume, in which all such connection is eschewed, as utterly baseless, and as a scheme wholly powerless to restrain men "from the gratification of lust, revenge, envy, avarice, and ambition, or to prevent the existence of such passions." Wholly unaware of the construction which might be placed upon his reasonings on the subject of the moral sense, and, therefore, we conceive, not responsible for the consequences, he calmly says, in the conclusion of his chapter, that "this celebrated question becomes, in our system, a question of pure curiosity, and he dismisses it to the determination of those who are more inquisitive than himself."

Dr. Paley's deep conviction of the depravity of man, a doctrine so earnestly taught in the Scriptures, was strengthened and confirmed by the events around him. In France, the sense of virtue seemed to have been extinguished. The moral corruption, which had existed among the higher classes since the time of Louis XIV., received its consummation in the revolution. The nation became a nation of blasphemers; the existence of God was denied; the immortality of the soul was pronounced a lie; religion, in all its forms, was declared to be the conceit of pride and ignorance; the very temples where He was wont to be worshipped, were dedicated to a deity far more loathsome and disgusting than any which ever disgraced a heathen mythology; the grossest infractions of moral and social duty were not only tolerated, but urged and rewarded; in a word, atheism, with its attendants, the vilest debauchery and lowest licentiousness, possessed the minds of all; fathers, mothers, sons, daughters, forgot the ties of kindred and relationship, and sunk even below the instinct of the brute; what wonder if, under such circumstances, one should question the fact, whether man carried a law within himself, a sense of the right and the wrong, a conscience true to virtue, whose ever ready and potential voice would give its faithful warnings to guard and protect the great interests of morality and mankind! This may have affected the reasoning of Dr. Paley, and, though it cannot be regarded as a proof of his doctrine, it may serve somewhat to account for it. But we here close our brief notice of his Moral Philosophy.

We do not think it necessary to add much in reference to his Political Philosophy. He rejects the entire theory of *compact*, and assigns, as the only ground of political obligation, "the will of God, as collected from expediency." The same general objections would obtain here, which we have found existing against his principle of morals. "Government is to be obeyed so long as the interest of the society requires it, and no longer." "The principle of expediency being admitted, the justice of every

particular case of resistance is reduced to a computation of the quantity of the danger and grievance on the one side, and the probability and expense of redressing it on the other." Here he opens the door in a special case for a violation of general rule; "he appears to have left out of the account the immense mischief of violating that long-tried and approved system of rules which we call the constitution."* It is to be remarked, that though no author insists more on the necessity of general rules, though none deals more in bold and startling dicta, yet, before he is done with them, he annexes such conditions, qualifications, and restrictions, as to deprive them of all possible mischief. When, as in the passage given above, he justifies resistance to the government, he insists that not every invasion of the rights of the subject, not every usurpation of power, not the interests of a few, will warrant resistance; but the case must be fully made out. The spirit of his teachings is conservative. Let it not be supposed, however, that Paley counsels unqualified submission. Though, in his chapter on the Duty of Civil Obedience, he quotes the language of the Apostle, "Let every soul be subject unto the higher powers; for there is no power but of God; the powers that be are ordained of God: whosoever resisteth the power, resisteth the ordinance of God;" he says of those who interpret it so as to authorize the most exalted and superstitious ideas of the regal character, that "they have sacrificed truth to adulation." It is not true that he holds "the divine right of kings," notwithstanding some passages would indicate the odious doctrine. "When the idea of a king presented itself to him, it was merely that of an individual invested with great substantial power, to be wielded for the benefit of the people. Crown and sceptre, beef-eaters, state-coaches, and guardsmen, the trappings, in short, of royalty, did not enter in as elements." In very few works are the specific duties of the citizen better defined than in Paley's, let men dispute as they may in regard to his speculative politics. It is to be observed, that his political philosophy has not provoked as general a censure as was bestowed upon his moral. Stewart, who seems to have had but little patience with the latter, remarks that "the political part of Paley's book, although by no means unexceptionable, displays talents so far superior to the moral, that one would scarcely suppose them to have proceeded from the same pen." Mackintosh regards him the equal of Blackstone in style, and superior in thought, and "in generous boldness." The great commentator he pronounces "a confused thinker, and not exempt from the charge of slavishness." Perhaps one of the best political papers from any English writer, is Dr. Paley's Dissertation on the British

* Whewell.

Constitution, which forms the seventh chapter of the sixth book. This, and the chapter immediately following, on the Administration of Justice, are entitled to high praise. They are marked by deep thought, an enlarged survey of his subjects, and are impressed by all that force and clearness of language for which he is distinguished.

We proceed now to a more agreeable task. It is no longer necessary for us to render excuses for our author, or to palliate the severity of criticism. The works to which we have to call the attention of the reader have received the most unmingled praise and admiration, and all that we have to do, is to add our humble voice to the universal anthem. The Horæ Paulinæ was the second in the series of the works of Dr. Paley. The purpose of it is to bring together, from the Acts of the Apostles and from the different Epistles of St. Paul, such passages as furnish examples of *undesigned coincidence*. He assumes nothing as true but the existence of the books, and he finds in the letters of Paul, and in the history of him as given in the Acts, coincidences which cannot be imputed to design, and which cannot be accounted for by accident. This is exemplified, not only by great particularity of detail and circumstance, but also by hints and brief expressions, and frequently by a single word. They are of such a nature as to prove that the epistles and the history are not taken from each other, and that they are, therefore, entirely independent records. If the genuineness of these letters, and the history of him, could be proved; if it could be established beyond contradiction that we are in possession of the very letters which the apostle wrote, then the Christian history will receive a strong additional support. This was the labour which was before him, and which he has executed with unsurpassed ability. First, we remark, that there was a pressing necessity for such a work: the Epistles of St. Paul, and the history of him, and the character of that eminent servant of God, had long constituted a favourite point of assault with the unbeliever. Nor did he calculate without sufficient reason. St. Paul was the most zealous, the boldest, and most energetic of all the apostles. He was, indeed, its chosen champion. In labours, in perils, in sufferings, who more abounded? He carried the gospel to the most remote lands, and, whether among savages or at the court of the most powerful princes, was alike its most uncompromising defender. Nor was he alarmed by the threats of the most sanguinary tyrants, but even they were made to tremble by the force of his courage and eloquence. The great expounder of the Christian doctrines, the great organ of their communication to the Gentile world, his history is most intimately interwoven with the history of Christianity, and, next to the great Founder of it, he is its main pillar. The doctrines of St. Paul cannot be false and those of Jesus Christ true; if Paul was an impostor, then the

whole scheme of Revelation is nothing but a vile cheat and delusion. "St. Paul's history," says Paley, "I mean so much of it as may be collected from his letters, is so implicated with that of the other apostles, and with the substance, indeed, of the Christian history itself, that I apprehend it will be found impossible to admit St. Paul's story to be true, and yet to reject the rest as fabulous." You cannot believe that there was such a man as Paul, a preacher of Christianity, and *not* believe that at the same time lived Peter, James, and all the other holy apostles, who were witnesses to the truth, and who have been specially commissioned to declare it. We have said that the shafts of infidelity have been especially levelled at this eminent apostle; and who can doubt that it is a blow at Christianity itself? In England, in France, in our own country and elsewhere, he has been repeatedly exhibited as an impostor; and this, too, by men who have pretended to be in love with the pure and simple teachings of Jesus. It would carry us too far from our design to notice these various forms of attack; we remark in general, that they include the worst enemies of Christianity. We must confess that we have more respect for the man who rejects the system altogether, than for him who pretends to accept a portion of it. The Scriptures are either all true or all false; they cannot be part of one and part of the other; they are either the oracles of God, or the cunningly devised fables of men. We shall call attention here to one of the assaults upon St. Paul. We have selected it from the vast mass, because it is made by a man to whom our country is deeply indebted for eminent political services, and because he has largely contributed to mould the mind of the people; we mean Mr. Jefferson. We wish not to detract from the measure of fame to which he is entitled, nor to abate one tittle of the gratitude which is justly due. Waiving, however, all discussion of his claims as a public man, but protesting against his apotheosis, we proceed to consider him for a moment as an assailant of St. Paul and the Christian religion. We assert no more than we believe when we declare, that neither Hume, Bolingbroke, nor Gibbon, propagated sentiments more hostile to religion than Mr. Jefferson; that he participated, in no small degree, in the odious doctrines of Voltaire, Diderot, and D'Alembert, and that he has done more to generate and foster the infidel spirit among us than all of our public men besides. He was a Unitarian of the lowest type, who regarded our Saviour as a mere man, but a very good man, whose moral doctrines would compare very favourably with those of Socrates, or any other moral philosopher. Not divinely commissioned however, he feels himself at liberty to believe what he pleases, and to reject what he pleases. He holds up Paul as the great corrupter of Christianity, the grand Coryphæus of impostors. He says that the chaff can be easily separated from the wheat, and this he promises to do; but

we believe that the promise was never redeemed. We have done with Mr. Jefferson.

In conclusion, the Horæ Paulinæ must be regarded as an original contribution to the evidences of Christianity. There is a completeness about it which few works exhibit. The author may be said to have exhausted his subject. It is distinguished by wonderful industry in the collation and comparison of passages, and a precision and power of reasoning which have never been surpassed. Infidelity has had one of its favourite grounds knocked from under it, and while the Christian is made to rejoice that his faith has been confirmed and established, the timid but sincere inquirer after truth will take fresh courage, and press on with brighter hopes and higher aspirations.

The "Evidences of Christianity" is so well known, and so thoroughly appreciated, that it cannot be necessary to dwell long upon it. Dr. Paley takes it for granted that mankind stood in need of a revelation. If any one should entertain a doubt, however, a glance at the history of past ages would place the necessity beyond question. The wisest of philosophers, and among these may be mentioned Plato and Socrates particularly, declared that there was such a need, and that there was no human means of reforming the state of morals. The highest efforts of the greatest minds had been made in vain to find out the true God, to ascertain his nature and will, and to attain to a certain knowledge of the highest happiness of man. Polytheism and idolatry overspread the world, and, like a dark cloud, were settled upon the fairest and most renowned states of antiquity. Athens was full of false deities, and Rome adopted all the gods of all the nations who fell before her victorious eagles. But we will not pursue the question which Dr. Paley takes for granted, for, as he remarks, "we have met with no serious person who thinks that even under the Christian revelation we have too much light, or any degree of assurance which is superfluous." In looking at the history of theological discussion at the period preceding the appearance of Dr. Paley's book, it will be perceived that it was largely devoted to the consideration of the *evidences*. There was then a necessity for such a work, to meet a public demand. Butler's Analogy, Warburton's Divine Legation of Moses, Soame Jenyns' Internal Evidence of Christianity, and Lardner's Credibility of the Gospel History, were before the world. All of these were good books in their way, and some of them have never been surpassed for close reasoning and masterly argument. Yet a work was wanted which would present the evidences in a clear and condensed light; which would give to the subject the coherence of system, and bring it to bear with all its power on the hearts and consciences of men. No man had more eminent qualifications for such a task, than our author. As in the Horæ Paulinæ, he has exhausted the subject, and left

nothing to be desired. Had he done nothing else, he would have earned a place among the most distinguished defenders of the faith, and deserved the eternal gratitude of mankind.

But we have reached his last great work, his "Natural Theology," with the composition of which he closed his useful life. Though we will not set up for it higher claims than for those to which we have already called attention; we cannot disguise the opinion that no other has excited an equal degree of surprise and admiration. It is the work of an old man struggling under the pressure of disease, and exhibits on every page a beauty and precision of language, a variety and aptness of illustration, an extent and minuteness of physiological and anatomical knowledge, and a power and vigour of reasoning which cannot fail to excite the wonder of every reader. Well has it been described "as philosophy in its highest and noblest sense; scientific, without the jargon of science; profound, but so clear that its depth is disguised." He brings knowledge from the clouds, where it was known only to a few chosen spirits, and assigns it a home among the dwelling-places of men. The book of nature is alike open to all, but like other books, most persons at least require a teacher to show them how to read it. The design of the work is to exhibit the evidences of the existence and attributes of the Deity, as collected from the appearances of nature. That the subject is worthy of such a pen cannot be doubted. It was the habit of our author to devote his powers to the most important questions about which the human reason can be employed; but all these questions converged to a single point, to the glory of God and the good of his creatures. This was his "high argument," and he never lost sight of it. Infidelity has assumed so many forms; it has so frequently shifted its grounds, that the friends of the religion of the Bible have been compelled to give new aspects to the character of philosophical discussion. There is something more necessary than simply to enforce its divine precepts. Errors and false reasoning must be exposed; the obstructions in the way must be removed, to give truth an entrance into the minds of men. This is a work of too great importance to be entrusted to superficial thinkers; the refined and subtle speculations of sophists and skeptics can alone be met sucessfully by the weapons which we draw from the armoury of a severe logic. The occasion calls for courage and prudence; for a sagacity which will discover the points in controversy, and for a judgment and spirit which will press them on to a decision, without any needless expenditure of forces. The great battle was to be fought in the field of nature. A plain man might suppose that the evidences of design and contrivance in the universe were so obvious and so numerous, as to challenge the convictions of every understanding. Not so, however. The history of the world proves that there was a necessity to bring them

out; that a logical array was required to silence the skepticism of many, and to give to them their full force and efficiency. The old notion of the omnipotence of chance, of the fortuitous combination of atoms, has not been without its advocates, in some form or another, at every period of the world. And yet the theists of antiquity on this false principle did construct a system full of errors and superstitions, in which the Divine Intelligence played a part. In modern times secondary causes are made to take the place of the great First Cause, and men are called upon to render to a law of nature the homage due to the mighty God. Nature is thus made to supersede the God of nature, and his works no longer testify of Him. Even at this very time, this doctrine is maintained with all that refinement of metaphysical subtlety which would give to it the appearance of philosophy, and with that pious ejaculation and sanctimonious profession which would recommend it as a scheme of morals. A very striking example is to be found in the reasoning of the French atheistical school, as expounded by M. Auguste Comte, in our own day. This school denies positively and consistently the proposition, that design and intelligence in the cause may with certainly be inferred from marks or signs of it in the effect, and casts doubts upon the further proposition, that there are the clearest marks of design and wisdom in the works of nature; thus denying the conclusion, that the works of nature are the effects of a wise and intelligent Cause. The argument from final causes is exhibited in a strong light by M'Cosh. "The provision made for the stability of the solar system, says M. Comte, is no evidence of a final cause. The pretended final cause reduces itself, as has been seen in all analagous occasions, to this puerile observation—there are no stars inhabited but those that are habitable. They return, in a word, to the principle of the conditions of existence, which is the true positive transformation of the doctrine of final causes, and of which the fertility and bearing are vastly greater." If there be any logical force in this remark, says M'Cosh, it must be held as affirming that no adjustments, however numerous and strikingly applied to secure an end, can be held as evidential of design. We lift a watch, found lying on a bare common, and examine it, and are about to conclude that it must have had a maker, when M. Comte comes to us and assures us that all this adaptation of wheel and axle, and notch, and hand, and figure, is but the condition of the existence of the watch. True, it *is* the condition of the existence of the watch, but it is a proof, too, of a designing mind arranging the condition. Laws which have been discovered, must have existed before they *were* discovered, and the glory belongs to Him who established them. Once admit that adjustments towards a given end, if sufficiently numerous and striking, may be held as proving the existence of a designing mind, and the number and nature of such adjustments

in the universe will at once force upon us the conclusion that this world has a presiding intelligence. Is it not, then, an additional security to the pilgrim to have a guide through nature's works; and does he not perform an acceptable service, who will demonstrate the existence of a God, as well from the formation and habitudes of an insect, as from the higher organization of man?

The design of Dr. Paley's work is different from that of most, if not all of the works which preceded it. They were addressed to believers in the existence of a designing Creator, while his work was intended, not only to display the wisdom and goodness of God, but to meet the cavils of atheistical objectors, and thus remove all difficulties in the way of belief. If it be said that the greatest part who read arguments to prove the existence of God do not stand in need of them, as they are not ignorant of the great truth, and never doubted of it, we will let our author answer in his own words: "By investigation, the following points are always gained in favour of doctrines even the most generally acknowledged (supposing them to be true), viz., stability and impression. Occasions will arise to try the firmness of our most habitual opinions; and, upon these occasions, it is a matter of incalculable use to feel our foundation, to find a support in argument for what we had taken up upon authority."

Dr. Paley finds a proof of the existence of God, and of his wisdom and goodness, in all the works of his hand. He first gives the state of the argument, which he represents by a comparison of a stone found in a heath, and a watch upon the ground, and argues design in the latter from seeing that its several parts are put together for a purpose.* He next proceeds to the application of the argument, and finds the proofs of contrivance in the works of nature far greater, far more abundant than in the works of art; and illustrates this by a comparison of an eye with a telescope. In the former the mechanism is more subtle, curious, and complex. An examination of it will show that they are constructed upon the same principles, and that the eye is made for vision and the telescope for assisting it. The argument of design, as concluded from the eye, he has pushed to great extent; and with a power and force of illustration never surpassed. In his chapter on the succession of plants and animals, he proves that the generation of the animal cannot account for the contrivance of the ear, any more than the production of a watch, by the motion and mechanism of a former watch, would account for the skill and intention displayed in the watch so produced; and so with the fructification of plants. Here he makes a beautiful application of the laws of analogy, and shows that, in all these cases alike, the prior existence in succession

* We believe that the argument of design may be deduced, though not as satisfactorily, from the *inorganic* as well as from the organic world.

is nothing more than a blind instrument, and not a contriver, and in total ignorance why that which is produced took its present form rather than another. In the next chapter he discusses various objections, and exhibits their utter futility. Among these may be mentioned the imperfections, inaccuracies, and occasional irregularities which are found in the works of nature, which he likens to a watch which may go wrong, or be defective in some of its parts, without a suspicion being excited that it is not a watch; also the objection arising from the unknown use, or operation of parts of plants or animals; to which he applies, by way of answer, the consideration previously suggested concerning the watch, that these parts, the use of which is not known, do not negative the reasoning concerning those parts the use of which is known. The fallacy of the atheistic objection, that all which we see must necessarily have had some form, and that it might as well be its present form as any other, the notion which resolves everything into chance, the doctrine that the parts were not intended for the use, but that the use arose out of the parts; these, with other points, are carefully examined and exposed. Time will not allow us to do more than to make a bare mention of them. There is, however, another false notion of such import that we must take the liberty of directing special attention to it; we mean that notion which refers everything to *a principle of order* in nature. And here we must give way to our author, and let him discuss it for himself. "A principle of order is the word; but what is meant by a principle of order, as different from an intelligent Creator, has not been explained either by definition or example, and without such explanation it should seem to be a mere substitution of words for reasons, names for causes. Order itself is only the adaptation of means to an end; a principle of order, therefore, can only signify the mind and intention which so adapts them. Or, were it capable of being explained in any other sense, is there any experience, any analogy to sustain it? Was a watch ever produced by a principle of order? And why might not a watch be so produced as well as an eye?" Dr. Paley proceeds next to the consideration of the argument as derived from the arrangement in the human frame; and this occupies a large portion of his work. The various parts of the body, even the most minute, with their several functions, pass successively under review. He exhibits an amount and accuracy of knowledge, and a fertility of illustration which are truly surprising. Though not a physician, no professional work of the day is freer from errors; and well might the proudest of the sons of Æsculapius aspire to its authorship. He gives the very best exposition of the mechanism of the human frame to be found in any book with which we are acquainted. And this we can account for satisfactorily. He studied the subject for himself, had great mechanical genius, as we read in the history

of his life, and brought to bear his unrivalled powers of description and elucidation. From every part of the body he draws a proof of design, of contrivance, of an intelligent Creator. He finds God everywhere; whether he is examining the wonderful mechanism of the lungs, the heart, or other important organs, or the nails or the skin of animals. Atheism flees before him; he leaves not an inch for it to stand upon.

But he stops not at a consideration of the human frame; he explores the field of comparative anatomy, for new proofs of his position. There he finds the evidences of a general plan of structure, with such variations as are demanded by the exigency of the occasion; and a proof, therefore, of intelligence and design so complete as to exclude every other hypothesis. The covering of the different animals, the plumage of birds, the different formations of the mouth, the diversities of the intestinal tube, of the lungs, of the feet, of the wings and fins, all these present examples of organic arrangement, and afford proofs of special adaptation. Our author makes good use of what he calls the fact of *compensation*, which is a species of relation. We call that a case of compensation, when the defects of one part or one organ are supplied by the structure of another part or of another organ. Many examples of this are found in the animal kingdom. By way of illustration, we will take the *crane*. He is to seek his food in the water, yet having no web foot, he is incapable of swimming. To *compensate* for this deficiency, he is furnished with long legs for wading, and a long bill for groping. Passing by several topics which he considers in the progress of the discussion, we will call attention, for a moment, to his chapter on Insects. He complains of difficulties in respect to some of the particulars of the insect constitution, which were not experienced in the examination of the higher animals. These were difficulties which sprung from a want of knowledge in the time of Dr. Paley. Entomology has, however, been pursued, since that period, with success, and the argument from this point has been more fully illustrated. But it was not without force in our author's hand. It derived importance from the antennæ, which project from each side of the head, from the scaly wings of the beetle, from the metamorphosis or transformation of insects, from the peculiar organization of the silk worm, and the beautiful and delicate thread which is spun by it; from the bee, his honey and his wax, and the striking mechanical arrangements which are carried out in providing a fit place for the nectarean treasure; from the pleasant, phosphorescent light of the glow-worm, and from the gossamer tissue of the spider which floats in the air, and stretches from limb to limb over brook and rivulet, thus furnishing a safe pathway for the little animal, which is without wings for flying, or muscles for leaping to any distance.

As examples of his wonderful genius for illustration, and the

facility with which he impresses truth upon the common mind, we will mention his comparison of the arrangement by which the laminæ of the feathers of birds are kept together, to a *latch* entering into a catch, and fastening a door; the comparison of the eyes of a mole and the mode of their protection, to *pinholes in a piece of velvet.* Again, the lobster has the power of throwing aside his buckler, and drawing his legs *out of his boots*, when they become too small for him, and the footless and wingless snail adheres to a stalk by a provision of *sticking plaster.* He compares the slit in one tendon to let another tendon pass through it, to the perforations in a *silk or cotton mill*, where, by *belts, or straps, or ropes*, motion is communicated from one part of the machine to another; and the tip of the tongue of the woodpecker, which is dentated on both sides, he likens to the *beard of an arrow* or the *barb of a hook.* Various species of flies have *awls* for boring fixed to their tails; in a sheath is enclosed a solid, dentated stem, along which runs a *gutter* or *groove;* and in the gad-fly, the wimble draws out like the pieces of a *spy-glass.* The teeth of fish have their points turned backward, like the *teeth of a wool or cotton card;* the teeth of lobsters work one against another, like the *sides of a pair of shears;* and he remarks of the aorta of the whale, which, according to Hunter, measures a foot in diameter, that it is larger than the *main pipe of the water-works at London bridge;* and the water roaring in its passage through that pipe is inferior in impetus and velocity to the blood gushing from the whale's heart.

He was his own teacher; he studied nature for himself. One of his biographers, the Rev. Edmund Paley, tells us that with the handle of his stick in his mouth, he would move about his garden in a hurried step, now stopping to contemplate a butterfly, a flower, or a snail, and now earnestly engaged in some new arrangements of his flower pots; that he would take from his own table to his study the backbone of a hare, or a fish's head; and he would pull out of his pocket, after a walk, a plant or a stone to be made tributary to an argument; and that he would make his own observations by picking the leg or wing of a chicken; and speculate upon what he supposed to pass in the mind of a pike, when he bit, or refused to bite: and upon what a young shrimp could mean by jumping into the sea.

Our author estimates the argument as drawn from the nature of *plants*, of less value than the argument deduced from the consideration of animals, yet he makes this class of the living kingdom bear with no little power upon his lofty purpose. With what eagerness would he have seized upon the wondrous organization, the nicely adjusted arrangements which the progress of knowledge since his day has brought to light! With what enthusiasm would he have dwelt upon the roots with their *spongeoles*, the leaf with its net-work of spiral vessels and its cuticle opening

externally, the beautiful and orderly structure of the cellular tissue which underlies it, the layers of vesicles on the upper and under surfaces; the sap vessels and the various organs which speak so plainly the great truth of contrivance and design! With what reverential feeling, with what pious amazement, would he have contemplated that structure, when he saw that full provision had been made for the performance of various functions which were known to exist in animals; that exhalation, secretion, absorption, respiration, circulation, and digestion were alike common to both! His active mind would have been fruitful in the discovery of organic arrangements and special adaptations; and to what a height would his gratitude have ascended, when he had seen the new proof of the benevolence of the Deity, as exhibited in the relations and dependencies of the two great kingdoms of nature!

But we must close our notice of the Natural Theology. Time would fail us if we were to attempt to follow our author in all his illustrations. The world has pronounced its judgment upon the work, and the great and good Arnold has only echoed the common sentiment when he declares "that the proofs of an intelligent and benevolent Creator are given more clearly in Paley's Natural Theology than any book with which he is acquainted." The reader will pardon us for making, in conclusion, a few extracts from our author, at the close of his work. "The works of nature want only to be contemplated. When contemplated, they have everything in them which can astonish by their greatness; for, of the vast scale of operation through which our discoveries carry us, at one end we see an intelligent Power arranging planetary systems, fixing, for instance, the trajectory of Saturn, or constructing a ring of two hundred thousand miles diameter to surround his body, and be suspended like a magnificent arch over the heads of his inhabitants; and at the other, bending a hooked tooth, concerting and providing an appropriate mechanism for the clasping and reclasping the filaments of the feather of the humming-bird." "One Being has been concerned in all. Under this stupendous Being we live. Our happiness, our existence, is in his hands. All we expect must come from Him. Nor ought we to feel our situation insecure. In every nature, and in every portion of nature which we can descry, we find attention bestowed upon even the minutest parts. The hinges in the wings of an *earwig*, and the joints of its antennæ, are as highly wrought as if the Creator had nothing else to finish. We see no signs of diminution of care by multiplicity of objects, or of distraction of thought by variety. We have no reason to fear, therefore, our being forgotten, or overlooked, or neglected." He closes his work with a consideration of "that grand point which gives interest and importance to all others, the resurrection of the human dead;" and with the concluding passage we bid adieu to the Natural Theology. "Upon the

whole, in everything which respects this awful, but, we trust, glorious change, we have a wise and powerful Being upon whom to rely for the choice and appointment of means adequate to the execution of any plan which his goodness or his justice may have formed for the moral and accountable part of his terrestrial creation. That great office rests with Him; be it *ours* to hope and to prepare, under a firm and settled persuasion that, living and dying, we are His; that life is passed in His constant presence that death resigns us to His merciful disposal."

We have now taken a view of Dr. Paley's principal works; of those on which his fame as an author rests. We might call attention to his volume of Posthumous Sermons, and be sure of awakening no little degree of interest. The works published in his lifetime were regarded by not a few who had the highest admiration of his genius, and respect for his virtues, as wanting in that open avowal of scriptural truth, that earnest reliance in the economy of grace, which would have shed so rich a lustre upon his name and character. His readers must judge of the extent to which he is amenable to the charge. His English editor, the Rev. Mr. Wayland, regards the volume of Posthumous Sermons as deeply interesting to the world, not only from the solemn truths which it unfolds, but from the aspect which it bears on his personal religion. In this work he bears testimony to most of the distinctive doctrines of Christianity. The habits of seriousness and self-denial, love of God and of our neighbour, prayer, the necessity for a complete change of heart, the influence of the Spirit, the sacrifice for sin made by our Saviour, his mediation and intercession—these and other points are pressed by him with an earnestness which makes certain the deepest conviction. Of the precise shade of his theology, we will not speak. That he regarded the Scriptures as the word of God, and that he looked for salvation, not through works, not through the divine benevolence simply considered, but through the grace of him as manifested in his appointed messenger and only beloved Son, are facts which no reader of his sermons can permit himself to question. Christ is his only hope. He is his comfort in life, his only solace in death. With what calm confidence does he rest in him, when he turns his thoughts on the awful subject of a future world! "To the Christian, whose mind is not harrowed up by the memory of unrepented guilt, the calm and gentle approach of his dissolution has nothing in it terrible. In that sacred custody, in which they that sleep in Christ will be preserved, he sees a rest from pain and weariness, from trouble and distress. Gradually withdrawn from the cares and interests of the world, more and more weaned from the pleasures of the body, and feeling the weight and press of its infirmities, he may be brought almost to desire, with St. Paul, to be no longer absent from Christ; knowing as he did, and as he assures us, that

if our earthly house of this tabernacle were dissolved, we have a building of God, a house not made with hands, eternal in the heavens."

In viewing Dr. Paley as an author, we cannot pass by in silence, some other publications of a character entirely different from those which we have already noticed. Among these may be mentioned the little pamphlet entitled, Reasons for Contentment, addressed to the labouring part of the British public. This publication was made at a most propitious moment; at a period when, history tells us, the altar and the throne were tottering to their foundations; when England was threatened with the terrible convulsion which shook France to her centre. This unpretending pamphlet is full of the most important truth, which is more or less applicable to all times. Differences in social condition must always exist; all communities contain both the rich and the poor; the educated and the uneducated; the professional man and the mechanic and labourer; the man clothed with trust and authority, and the humble citizen, whose only duty to the State would seem to be comprised in obedience to the powers which are placed over him. The great purpose of the publication, is to enforce the duty of contentment with the lot which Providence has assigned us. He presses upon the consciences of all, the solemn truth, that we should keep our attention fixed upon the duties and concerns of our particular condition. From the very necessity of the case, the appointed services of men must be different; and he is acting very unwisely, and is guilty of a species of rebellion against God, who finds cause of complaint in the comparison of his condition with that of others. Riches can only fall to the lot of a few; but who will say that these are the favourites of earth? They bring care and anxiety, and foster and encourage vices to which the poor are strangers. The real pleasures of life are simple, and easy of attainment to all. The poor may enjoy them in their utmost purity, and freed from those contaminations with which they are generally alloyed by the rich. The luxuries of the wealthy, their eating and drinking, and other like indulgences, not only bring no increase of enjoyment, but blunt the sensibilities, and terminate in a sickening, satiated existence. The poor are apt to envy the rich in their *ease*. "Here they mistake the matter totally. They call inaction ease, when nothing is farther from it. Rest is ease, that is true; but no man can rest who has not worked. The rich see, and not without envy, the refreshment and pleasure which rest affords to the poor, and choose to wonder that they cannot find the same enjoyment in being free from the necessity of working at all." Let not the poor man envy in the rich, their state, their appearance, the grandeur of their houses; their dress, their equipage, and their attendance; they only envy them these things because they do not know them. "If they could see the great man in his retire-

ment, and in his actual manner of life, they would find him, if pleased at all, taking pleasure in some of those simple enjoyments which they can command as well as he." "To learn the art of contentment, is only to learn what happiness actually consists in. Sensual pleasures add little to its substance." "One constant spring of satisfaction, and almost infallible support of cheerfulness, is the exercise of the domestic affections. The poor man has his wife and children about him, and what has the rich more? He has the same enjoyment of their society, the same solicitude for their welfare, the same pleasure in their good qualities, improvement, and success; their connection with him is as strict and intimate, their attachment as strong, their gratitude as warm. I have no propensity to envy any one, least of all the rich and great; but if I were disposed to this weakness, the subject of my envy would be, a healthy young man, in full possession of his strength and faculties, going forth in a morning to work for his wife and children, or bringing them home his wages at night." But we dismiss the little pamphlet with a single additional remark. It is full of good sense, of benevolence, of high philosophy, and of patriotism, and never were its sober truths inculcated with greater force and simpler earnestness.

We have now concluded our notice of Dr. Paley's works; but we must ask our readers to bear with us a little longer, while we attempt to give, with more distinctness than we have yet done, our impressions of the nature of his mind, and of his character. The chief element of his mental constitution was, perhaps, strong, practical common sense. He was an industrious observer, and was gifted with extraordinary powers of discrimination. He always saw the value of his facts, and well knew how to make the best use of them. It is an opinion so common, that it may almost be regarded as universal, that he was wholly wanting in a talent for *metaphysical* inquiry; but this, we think, has been taken for granted too readily. Rather would we say that he had no peculiar *taste* for such investigations; that he preferred to exercise his high powers in another direction. Few men have possessed a more refined and discriminating judgment, a severer logic, and a *higher genius for system*. To him must be assigned the noblest powers of the understanding. No doubt he laboured in those fields where he could reap the richest reward; and it is good for the world that he made such a selection. Let it not be said that he is a mere copyist; that his works exhibit no proof of originality. If ever *one* mind was seen pervading the entire productions of an author, it is in the case of Dr. Paley. He may take the dead facts as he finds them, whether in the books of men or the great book of nature. He casts the magic influence of his genius upon them; they assume form and shape, and, behold! are instinct with life and motion. His style is as near perfection as we can

imagine. Simple, perspicuous, elegant and forcible, he always uses "proper words in proper places." His works are remarkable for nice method and orderly arrangement. He is never misconceived, never liable to have his meaning perverted. We have often thought of him as a *teacher* of youth, and never, we think, in this respect was man more gifted. With his clear head, his charming language, and his unequalled powers of illustration, who could better remove the obstructions in the rugged pathway, and conduct the pupil into the temple of knowledge? His mind was ever active in the search after objects on which to expend its powers. In a single bound it could pass from the most complex questions of speculative truth, to the simple problems of common life. Its range was vast, embracing alike the profound topics of the highest philosophy, and the wants and concerns of childhood. Milton and Jeremy Taylor have been justly praised for writing a Latin accidence for children; and Johnson, in his life of the good Dr. Watts, has commended him for his Hymns for Infant Minds. Why may we not render similar honours to Paley for The Young Christian Instructed in Reading, and in the Principles of Religion; Compiled for the Use of the Sunday Schools in Carlisle! Longinus compares an elevated genius employed in little things, to the sun in his evening declination, who abates his splendour, but retains his size, and becomes less dazzling, but more pleasing to the eye.

The personal morality of our author was free from blemish. Social in his nature, he indulged in some forms of amusement which the strict exactions of a religious profession might condemn. He adopted, to a greater extent perhaps than was becoming his ecclesiastical dignity, the advice of Horace to Virgil, "Misce stultitiam consiliis brevem, dulce est desipere in loco." He mingled freely with the world, and carried his philosophy along with him, that the world might profit by it; unlike those who treat philosophy and her followers like a parcel of monks and hermits.

The most striking features in his moral nature were his cheerful, happy temper, and his unbounded benevolence. He *did* believe that God designed the happiness of his creatures, and that the arrangements of his providence were most ample to secure it. Life itself was enjoyment; he saw it in the infant before the period of reason, in the brute, the oyster, and the periwinkle. Full of this thought, he found it exemplified in the whole circle of animated existence. Air, earth, and ocean were all stocked with creatures exulting in the happiness of their being, and all nature shouted one common note of praise and rejoicing. Neither man nor the smallest insect that floats in the breeze was made to be miserable. Even in this world of sin, he conceived that the good exceeded the evil, that happiness more than counterbalanced misery. Who does not envy his habitual cheerfulness of spirit,

his high, heaven-born philosophy! What a contrast to the poor victim of a melancholy delusion, who sees nothing in the arrangements of Providence to awaken a joyous emotion; who looks upon the world as a grand inquisitorial machine, intended only for purposes of torture! Who does not mourn over the pernicious asceticism of a Pascal, when he drives from his side, at the last hour of his existence, the sister of his love and affection, and when he learns that he wore beneath his clothes a girdle of iron, with sharp points affixed to it, and that when he saw that his mind was taking delight in things around him, he struck the girdle with his elbow, and forced the sharp points into his side! How much more becoming a rational religion, is the buoyant cheerfulness of a Fuller or a Paley, from whose bosoms it flowed as a perennial stream, to gladden the hearts of all around! Dr. Johnson, in his Rambler, when speaking of the various anomalies of character which the world exhibits, calls attention to a species of beings in human form, whom he designates as the *screech-owls of mankind.* "These screech-owls are settled in the opinion that the great business of life is to complain, and that they were born for no other purpose but to disturb the happiness of others; their only care is to crush the rising hope, to damp the kindling transport, and alloy the golden hours of gayety with the hateful dross of grief and suspicion." Dr. Paley was not of this class. His sympathies were co-extensive with man, and his expansive benevolence embraced everything which concerned the wellbeing and happiness of the race. Most truly did he adopt the sentiment of the Roman poet: "Homo sum, humani nihil a me alienum puto;" and to hunt up the needy and the destitute, that he might pour the oil of gladness into their troubled bosoms; to consecrate his talents to the promotion of the general good, and to magnify and make glorious the name of the great Jehovah, was the single purpose of his useful life. "O," says Coleridge, "if I were fond and ambitious of literary honour, of public applause, how well content should I be to excite but one third of the admiration which, in my inmost being, I feel for the head and heart of Paley! And how gladly would I surrender all hope of contemporary praise, could I even approach to the incomparable grace, propriety, and persuasive facility of his writings!"

Art. VII.—THE PHYSICAL GEOGRAPHY OF THE SEA.

The Physical Geography of the Sea. By M. F. Maury, LL.D., Lieut. U. S. N. New York: Harper & Brothers. 1855.

Plunged at the bottom of the atmospheric ocean which envelopes our little planet, we are witnesses of the changes which are incessantly going on in it. Serene or cloudy, cold or hot, dry or moist, calm or agitated, the atmosphere exercises a powerful influence over all organized beings. It is the source as well as the theatre of those sublime meteorological phenomena which we constantly behold with mingled feelings of terror and admiration. It is necessary to the life of vegetables as well as animals. It is, moreover, the peculiar medium of land animals and of man, the scene of their actions, the fluid ocean in which they are always *immersed*, and on whose depths or shoals—which are lofty table-lands and mountains—they live and act their part in the great plan of creation. It is to them what the sea is to the fish; remove them from it, and they necessarily perish. In some respects nature seems to have been more favourable to the fishes than to us; most of them can ascend to the surface of the fluid in which they live, but we can exist only in the lowest depths of the atmospheric ocean; if we venture to ascend even a few miles, our energies begin to fail, we are rendered sensible of our imbecility and rashness, and we are compelled to descend to the bottom, the place she designed us to occupy.

In fact, the condition of man is so intimately connected with the various phenomena of the atmosphere, that he may, without impropriety, be regarded as a meteorologist by nature. In all the varied circumstances of his state, whether as a wild and uncultivated savage, exposed to the fury and inclemency of the weather; or in the first stages of civilization, when he has discovered some feeble means by which he can shelter himself from the descending torrent and the scorching energy of the sun or the frozen blasts of the north; or when, as a shepherd and agriculturist, his interest leads him to watch with more anxiety the varying aspect of the sky; or, as a mariner, to connect the agitations of the ocean with the terrible force of the sweeping wind; he finds much of his comfort and happiness, and, at times, even his safety and existence, identified with the mighty and changeful character of the great fluid ocean in which he is placed. "Nor, in the more refined classes of society, does the subject lose any of its universality or interest. Much of the tact of experience is blunted or lost; but science furnishes artificial aids to observation, which supply, perhaps inadequately, the deficiency; and the general influence of atmospheric phenomena is still felt and acknowledged, though

possibly not so accurately appreciated. The generality of this interest is, indeed, so absolute, that the common form of salutation amongst many nations is a meteorological wish, and the first introduction between strangers a meteorological observation."* Even in the highly artificial state of society which obtains in metropolitan towns—where man scarcely ever so far extricates his thoughts from the works of his species, as to elevate them to the contemplation of the sublime in nature—we find that his physical as well as his moral wellbeing depends, in a great measure, on the condition of the atmosphere. When the sky continues dark and lowering, gloomy forebodings possess the mind of the invalid; the spirits are depressed, and suicides become epidemic. Hence, it is not simply the desire of knowledge which urges man to the inquiry into the causes of these continual fluctuations in the condition of the atmosphere; but these questions are frequently of the highest importance to the husbandman, the sailor, the artizan, and the physician. As might have been expected from the relations which meteorological phenomena bear to man's physical wants, the study of atmospheric variations dates back to the remotest antiquity. Some of the most beautiful imagery, in the rich productions of oriental imagination, is borrowed from the contemplation of meteorological phenomena.

"But," as Daniell says, "although atmospheric phenomena have excited the attention of all classes of men, from the earliest ages of the world; and have probably formed the most ancient and universal theme of conversation and speculation, both with the learned and unlearned; and although they may have been daily, nay, hourly, discussed since the time when the human race was first exposed to their influence, the remarks of the vulgar, many of which become, in the course of ages, proverbial, and the theories of the philosopher, have been alike insufficient for a rational and satisfactory explanation of their general laws." Nothing can be more true than the view contained in the above extract. At first sight, we should naturally expect, that meteorology ought to be one among the most advanced of the sciences, because, for thousands of years, it has been the object of the labours of so many intelligences. Unfortunately it is not so; and the reasons are sufficiently obvious to the reflecting mind. When we consider the peculiarly intricate conditions connected with every atmospherical problem; the large advances that must be made in many capital portions of knowledge, before one successful step can be made in this; the subtile nature of the medium which is the subject of investigation; its singular relations to moisture; the changes it undergoes with every alteration of temperature; in one region

* Daniell.

influenced by the full power of a vertical sun, and in another chilled by the frozen masses of the polar zones; altering its circumstances on lofty hills, and again assuming new conditions in the valleys; the countries of the west receiving the air that a few hours before lingered on the islands of the east; the warm breath of the south softening the rigours of the colder regions of the north; the vapour rising from the bosom of the Atlantic, dropping richness and fertility on the verdant shores of our Republic; all these, and a thousand more complicated inquiries, beset the investigator at the very threshold of meteorology, stimulating him to ardent investigation and inspiring him with wholesome caution. Indeed, the complication of the processes carried on in the immense laboratory of nature, the widely extended circle of their agency, and the ever varying results of their compound influences, appear to have been almost too much for the mind to comprehend as a whole; and the powers of reason have been bewildered in the inextricable labyrinth of causes and effects, of actions and reactions.

But there are other reasons why meteorology cannot possibly advance at a pace equal to that of many branches of science. It is doubtless true, that a vast body of observations on the modifications of the atmosphere has been accumulated; the observers have been faithful, assiduous, and cautious in interrogating nature; but they have been, at the same time, *observations* in the most restricted sense of that term. We observe the phenomenon presented to us, but we cannot modify and vary it at pleasure; we cannot reproduce it at will. In a word, we cannot have recourse to *experiment*. The natural philosopher may isolate a portion of air in his various forms of pneumatic apparatus, and is thus enabled to study all of its mechanical properties. By means of his air-pump he tortures nature, and, as it were, compels her to answer his interrogatories in a satisfactory manner. The meteorologist is debarred this inestimable privilege. By virtue of the peculiar laws of fluids, all parts of the atmosphere are in perpetual and mutual intercommunication. A disturbance of equilibrium in China influences, to some extent, the whole aerial ocean, and may, therefore, produce an effect on our weather. Experiments on isolated portions of air are of no avail; the phenomena involve the whole gaseous covering of the earth. But our means and our powers are much too limited to give us the ability of producing the least changes in the atmosphere. We are, therefore, compelled to register *facts;* and, as Sir William Herschel has very well observed, "we resemble a man who hears now and then a few fragments of a long history related, at distant intervals, by a prosy and unmethodical narrator. In recalling to mind what has gone before, he may occasionally connect past with present events; but a host of circumstances omitted or forgotten, and the want of connection, prevent his obtaining possession of the entire story.

Were we allowed to interrupt the narrator, and ask him to explain the apparent contradictions, or to clear up any doubts on obscure points, then might we hope to arrive at a general view. The questions that we would address to nature are the very experiments of which we are deprived in the science of atmospheric modifications." Were we able to ascertain the changes which take place in the regions of the atmosphere, with the same ease that the astronomer watches the motions of the planets, or the chemist observes the formation of a precipitate, the very multiplicity of these changes, and the variety of the conditions under which they occur, would be of essential service in the determination of their laws, instead of being, as at present, sources of doubt and embarrassment.

The foregoing considerations are sufficient to show that no science, involving the investigation of a multiplicity of mutually dependent phenomena, can make any very rapid or satisfactory progress, so long as it remains a science of *mere observation*. I am aware that astronomy, while in this condition, *did* make very decided progress in the hands of the ancients; but it must be borne in mind, that the phenomena were few and of the simplest kind, and, therefore, well adapted to the discovery of the laws which governed them. Time, place, and motion, involve all of the conditions to be observed; and the obvious periodicity of most of the phenomena speedily led to a satisfactory verification of the observations. But, even in the case of astronomy, how vastly more rapid was its progress when, in the hands of Newton, it became a branch of mechanics, by extending to it the experimental laws established by Galileo!

To obtain a knowledge of the laws which atmospheric phenomena obey, we must not only possess a large number of trustworthy observations, but it is further necessary, that they should be combined in such a manner that general laws may be separated from all accidental disturbances. It is the latter which excite our curiosity in the greater degree, and tend to fix the attention of the observer. But they are also the most difficult of explanation, and can only be investigated after the less irregular phenomena have been traced to their true causes. It is for this reason that it frequently happens, that the deductions drawn from the best meteorological observations, are in formal contradiction to the best established laws. Thus, in a general way, the thermometer falls when the barometer rises, and vice versa; but how very often is the contrary observed! How are these anomalies to be explained? Has the Creator imposed no laws upon atmospheric modifications? Must we say that nature is capricious? Assuredly not; for these anomalies are due to the action of the very causes which give rise to the other phenomena. An isolated observer, however much he may be supposed to be endowed with perseverance and sagacity,

could not possibly arrive at a plausible explanation. It is solely by comparing his observations with those made at other points, that a satisfactory result can be obtained. Oftentimes these observations do not exist; or, if they have been made, they only embrace a small portion of the earth's surface. Yet, in order to explain certain general disturbances, it is necessary to compare observations made simultaneously in every quarter of the globe. No phenomenon is isolated; it is always connected with those of the entire atmosphere. General views have been greatly embarrassed by attempting to deduce laws from local observations. The results thus evolved, are more intimately associated with the particular configuration and other relations of the country, than with the general causes of atmospheric disturbance.

It is obvious, therefore, that, even under the most favourable circumstances, meteorology must advance very slowly. The phenomena are too complex to permit hasty generalization. Facts must be collected; observations must be multiplied over vast extents of territory. Speculation will not answer; cautious induction is the only method of reaching the general laws. The cultivators of this department of knowledge should be encouraged by the fact, that several important laws have already been extricated from what seemed to be a mass of incongruous records. By transferring his point of observation to the tropics, Humboldt was able to show, that meteorological phenomena observed a regularity and periodicity, which were comparable with the celestial movements. To an inhabitant of the temperate zone, what is more apparently irregular, or more proverbially uncertain, than the directions of the winds and the periods of rains? Yet, within the tropics, the winds blow in a fixed direction, and the rainy season, as it has relation to the position of the sun, is as unalterably uniform as the periods of the moon. The majesty of nature's uniformity is here obvious even to the savage, and no lunar influences are evoked to explain meteorological phenomena.

The remarks that have been made in relation to the extreme complexity of the causes which produce atmospheric modifications, may, with equal propriety, be applied to oceanic phenomena. Like the air, it is a fluid; all parts of the great oceans exercise a mutual influence on each other. And the more direct influence of the interposition of bodies of land, in modifying the direction of currents, together with our ability to do little more than make *surface* observations, while the phenomena to be explained involve the whole depths of the sea, combine to render the investigation, if possible, still more difficult and complicated.

In the volume whose title appears at the head of this article, Lieut. Maury has made a bold attempt to grapple with some of the most refractory problems of meteorology. For, although the title might seem to indicate that the author has restricted himself

to *oceanic* phenomena, yet, in truth, as will be seen in the sequel, he endeavours to promulgate what he deems to be more satisfactory and philosophical views in relation to the physical explanations of ocean currents, winds, rains, storms, and, indeed, all the great atmospheric modifications. It is our purpose to discover how far he has been successful in elucidating phenomena so inherently complex, and requiring, as we have said, such cautious generalization, and such accurate knowledge of many departments of science.

The causes which produce the remarkable current in the Atlantic ocean, well known as the Gulf Stream, have long been the subject of investigation among men of science. The old idea that the Mississippi river was the cause and source of this current, could not, for a moment, stand the test of observation or reason. The opinion of Dr. Franklin, that the gulf stream is produced by "the escaping of the waters that have been *forced* into the Caribbean sea by the trade winds," is much more rational, and may be looked upon as a vera causa, since such a current must be the necessary physical result of the continuous operation of a wind blowing in a fixed direction. The only question is, whether this cause is *adequate* to explain the phenomenon. The sources of this remarkable oceanic stream must be sought for in the great equatorial current which runs between the western coast of Africa and the eastern coast of South America. This body of moving water strikes the latter coast at Cape St. Roque, and a greater portion of it is thus forced into the Caribbean sea, thence into the Gulf of Mexico, and thence through the Straits of Florida into the Atlantic. The current created by the trade winds is perhaps *not adequate* to explain this powerful stream; especially when it is recollected, that it is so deep-seated, that the waters discharged by the Amazon and Orinoco do not deflect it from its course. While we might subscribe to the opinion of Lieut. Maury, that the trade winds cannot be looked upon as the *sole cause* of the gulf stream, yet we must protest against such loose reasoning as is contained in the following paragraph:

"Supposing the pressure of the waters that are *forced* into the Caribbean sea by the trade winds to be the *sole* cause of the gulf stream, that sea and the Mexican Gulf should have a much higher level than the Atlantic. Accordingly, the advocates of this theory require for its support 'a great degree of elevation.' Major Rennell likens the stream to 'an immense river descending from a higher level into a plain.' Now we know very nearly the average breadth and velocity of the gulf stream in the Florida Pass. We also know, with a like degree of approximation, the velocity and breadth of the same waters off Cape Hatteras. Their breadth here is about seventy-five miles against thirty-two in the 'Narrows' of the Straits, and their mean velocity is three knots off Hatteras

against four in the 'Narrows.' This being the case, it is easy to show that the depth of the gulf stream off Hatteras is not so great as it is in the 'Narrows' of Bemini by nearly fifty per cent., and that, consequently, instead of *descending*, its bed represents the surface of an inclined plane from the north, *up* which the lower depths of the stream *must* ascend. If we assume its depth off Bemini to be two hundred fathoms, which are thought to be within limits, the above rates of breadth and velocity will give one hundred and fourteen fathoms for its depth off Hatteras. The waters, therefore, which in the Straits are below the level of the Hatteras depth, so far from descending, are actually forced up an inclined plane, whose submarine ascent is not less than ten inches to the mile."

Does the author mean to say, that the configuration of the *bottom* determines the direction in which a fluid will run when acted upon by gravity, and thus decides whether the current is ascending or descending? We have always laboured under the impression that it is the angle made by the direction of gravity with the *surface* of the fluid, that determines the manner in which the current must run, and that consequently a stream may be actually *descending* while the *bottom* may be ascending. This view is so simple and obvious, and, moreover, so accordant with the most casual observation, that it might be supposed that the author had expressed himself ambiguously, had he not brought out the same idea in a more distinct form, in another part of the volume. At page 125 (paragraph 237), he says: "It is not necessary to associate with oceanic currents, the idea that they must of necessity, as on land, run from a higher to a lower level. So far from this being the case, some currents of the sea actually run *up hill*, while others run on a level. The gulf stream is of the first class." Now, whatever may be the causes which produce the great equatorial current, it is sufficiently obvious, that the vast mass of water which it carries into the Gulf of Mexico, must, as a physical necessity, occasion an elevation of the water in that reservoir, above their normal level; and that this is, probably, one of the *main causes* which give motion to the gulf stream. And it is likewise evident, that no "great degree of elevation" is required to communicate the observed velocity. For, the laws of hydrodynamics assure us, that an elevation of *one foot* is sufficient to give a velocity of eight feet per second, which is equal to nearly five and a half miles per hour, which exceeds the maximum velocity in the Straits of Florida. In relation to the *volume* of hot water which is thus set in motion, it is very plain, that it must be progressively diminishing in its progress northward along our coast, by continual admixture with the colder waters at the bottom and sides; and that, consequently, the stratum of warm fluid must become thinner. Hence it appears, that the thickness of the layer of warm water may be

considerably *less* off Hatteras than in the straits, and yet the stream may be running *down hill.*

In seeking for other forces as the efficient causes of the motion of the gulf stream, the author makes use of expressions which are rather difficult of comprehension. In this category, we may include the "*chemical*" or "*galvanic properties*" of the gulf stream waters, which are said to be "more intense than they are in sea water generally." If he means to say, that waters of different densities do not mingle with facility, there is certainly nothing novel in the idea. Again, we are told, that the waters which rush into the Gulf of Mexico, may be ejected through the straits of Florida, by "*a sort of squirting force.*" (P. 34.) Does he mean that the water, which has been heaped up in the gulf by the deflection of the great equatorial current, tends, by reason of this elevation, to rush out through the straits? If so, in what respect does the author's explanation differ from Dr. Franklin's original conception?

Again, Lieut. Maury remarks, "Now the gulf stream, with its head in the Straits of Florida, and its tail in the midst of the ocean, is wedge-shaped; its waters cling together, and are pushed to and fro, squeezed, if you please, by a pressure, now from the right, then from the left, so as to work the whole wedge along between the cold liquid walls which contain it. May not the velocity of this stream, therefore, be in some sort, the result of this working and twisting; this peristaltic force in the sea?" (Vide p. 252–253.) We confess that all our physical conceptions have been swallowed up by this gigantic sea-monster, which is thus enabled to move *tail-foremost* across the Atlantic!! Unfortunately, the recent observations of the Coast Survey *do not* indicate the vibratory motion which this extraordinary theory demands. We have been accustomed to consider theories as based upon *facts;* as general views grouping and combining scattered and incoherent phenomena. But our author tells us, that "when facts are wanting, it often happens that hypothesis will serve, in their stead, all the purposes of illustration." (P. 31, par. 19.) This assuredly must be the foundation of the remarkable "*peristaltic*" hypothesis which we have been considering! For it is evident, that even if such a pendulum-like motion did exist, nothing but an *inherent living force* could give progressive motion to the vibrating mass of water.

We shall now proceed to make a few remarks, in relation to the views thrown out by Lieut. Maury, touching the causes which produce the more *general* system of oceanic currents. Leaving out of consideration the influence of the trade winds, which, as we have seen, must be looked upon as a vera causa, if not an adequate cause—those enumerated by our author may be embraced under the following heads:

1. A difference of *density* of the waters of the equatorial and polar regions, due to the difference of temperature. This would make the waters of the equatorial seas relatively higher than those of the temperate and polar zones, and would thus create a *surface* current from the equator to the poles, and an *under* current from the poles to the equator. This latter would, through the rotation of the earth, be gradually converted into a current flowing from east to west, (that is, in the direction of the trade winds,) which might, in the tropical regions, involve the whole mass of water, and thus give origin to a great equatorial stream, which would completely encircle the globe, but for the deflecting influence of the continental masses. This has long been recognized as one of the probable causes of oceanic currents, and, therefore, needs no particular notice.

2. The excess of *evaporation* over precipitation in the tropical regions. Such a cause would *lower* the water-level of the equatorial zone, and produce a current in a direction precisely the *reverse* of that originating in difference of temperature, viz., a *surface* current towards the equator. The *under* or *return* current *does not* seem to be a *necessary* result of this supposed cause, at least in the case of fresh water. But is the postulate *true*, which assumes that evaporation exceeds precipitation in the tropics, while the reverse is the case in extratropical regions? The best observations give the following *mean* results, in relation to the *annual* fall of rain:

In the tropics,	8.50 feet.
In the temperate zones,	3.00 feet.
In the frigid zones,	1.25 feet.

From this it appears, that the tropics are the regions of *greatest* precipitation; whether it is in excess of evaporation, or the reverse, is a difficult problem, for the solution of which observations are still wanting. It is true, that our author quotes Dr. Buist, to prove that the annual evaporation in the Bay of Bengal, amounts to sixteen or eighteen feet annually. (P. 92.) But it should be recollected, that the Indian Ocean is in the region of the *monsoons*, and that an almost incredible amount of the vapour which rises from its surface, is condensed along the flanks of the Ghauts mountains, producing an annual precipitation, in some places of *twenty-five feet of water*. The annual amount of water discharged by the rivers of a country, may be considered a measure of the excess of *precipitation* over evaporation, so far as the *land* is concerned. If we apply this criterion, we find that many of the largest rivers in the world are to be found in the intertropical regions. The Amazon and Orinoco, the Ganges and Indus, the Nile, all receive their waters from the rains which fall within

tropical regions. Observations in relation to the amount of rain which falls on the *ocean* are wanting, as well as in regard to the mean annual evaporation; so that we are not in a condition to decide the question definitively. But there are no facts which warrant the assertion that evaporation *exceeds* precipitation within the tropics.

3. Increased *saltness*, and consequently increased density of sea water, produced by *excess* of evaporation in the intertropical regions. We have already shown, that the postulate, in regard to the excess of evaporation is more than problematical. But, granting it, we do not see that the case would be different from that of fresh water, excepting that a *vertical* circulation would be established in the salt water. In both cases, the sea level would be depressed, and a *surface* current would flow from the temperate zones to supply it, at the same time that an *under* current might flow from the equator towards the poles. It thus appears that the currents established by the cause under consideration, and those produced by a difference of temperature in the waters, *are precisely antagonistic.* Under the influence of such opposing forces, in what direction will the waters move? What light is thrown on the causes of oceanic currents by such speculations?

4. Lastly, we are told, that the "*sea shells*" are silent agents in carrying on the system of oceanic circulation, by abstracting solid matter from the water, and thus diminishing its *density.* As the coralline animals, the chief agents in this cause, are restricted to the intertropical regions, the effect is *antagonistic* to the *saltness.* What results can be eliminated from such conflicting forces? But the author has overlooked another physical result, which these little creatures produce in secreting these solid matters. It is well known, that bodies in a state of solution occupy *less space* than when in the *solid* condition. Thus, for example, a crystal of common salt put into a glass of water, will elevate the fluid to a greater extent than after solution has taken place. Of course, the converse will be true when solidification occurs in a solution: when crystallization of the salt supervenes, the water must be elevated in the glass. Hence it follows, that while the coralline animals are *diminishing* the density of the sea water by abstracting solid matters from it, they are, at the same time *elevating* the waters of the ocean, by displacing them by means of their secretions, and thus *increase* their hydrostatic pressure. Here we have two opposing effects: who can tell the result? But the fact is that in whatever point it is viewed, this cause must be inappreciable, if not infinitesimal; for it is well known to naturalists, that corals cannot live at a greater depth than about twenty fathoms!

This completes our review of Lieut. Maury's attempts at assigning physical causes for the oceanic currents. The influence of the trade winds and inequality of temperature, have long been recog-

nized as veræ causæ; and we think that we have clearly shown, that our author *has not* made the slightest addition to our knowledge, or advanced a single step towards a more satisfactory explanation of the phenomena. The cause of true science demands that this should be announced explicitly and unequivocally.

We shall now endeavour to discover what light Lieut. Maury has been able to throw on the subject of winds and rains. His views in relation to the general circulation of the atmosphere are *unique* and somewhat novel, and require particular notice. He supposes that the air *ascends* as a spiral current at each of the poles; *upper* currents are thus produced, and continue so until they reach respectively the northern and southern limits of the tropics; they are then deflected *downwards*, and become *surface* currents in the regions of the trade winds; the two surface currents meet at the equator, *ascend* in the region of equatorial calms, *cross each other* in the superior regions of the atmosphere, so that the current from the southern hemisphere passes to the northern, and vice versa—continue their course as *upper* currents over the trade winds, and are, at the tropics, deflected *downwards*, and become *surface* currents until they reach the polar vortices, whence they started. According to this view, the *surface* winds of the *north* temperate zone have come from the region of the *southern* trades, and vice versa; while the trade winds are respectively the deflected *upper* winds of the regions lying to the north and south of the tropics of Cancer and Capricorn. Leaving out of consideration the polar vortices, the winds are thus made to *cross each other no less than three times*; viz., once at *each* of the tropics, and once at the equatorial calms. Such an extraordinary gyratory circulation in a gaseous mass, is certainly at variance with all known laws of the action of heat on aeriform bodies, and is by no means in accordance with that severe uniformity which we should expect to find in the works of nature. Whatever may be the complexity of the phenomena presented by atmospheric disturbances, we should reasonably expect, that the agent whose *local effects* can be accurately and rigourously determined, would follow the same *general laws* when acting upon the whole gaseous envelope of the earth. Now, it is admitted on all hands, that the unequal distribution of solar heat on the earth is the *controlling* cause of all disturbances of equilibrium in the atmosphere. We *know* that this cause is adequate to explain the phenomena of winds, in many cases in which accurate and satisfactory observations can be made. The land and sea breezes are local winds, whose causes and laws are well known; but such crossings and recrossings as the theory under consideration demands, have never been observed in them. In fact, that currents of air should *regularly* and *uniformly* cross and recross each other in particular regions of the atmosphere and retain their horizontal velocity, involves a physical difficulty of the

most serious kind. Two horizontal strata of different densities might very well move in opposite directions; but to *cross each other* and still retain their individuality, is quite a different affair. Moreover, in the case of the interchange of the winds of the two hemispheres, which is supposed to take place above the region of equatorial calms, what force gives them their northerly and southerly velocity? By the time the trade winds reach this region, they become *east winds*, and have, therefore, lost all velocity in the *direction* of the meridians. When they ascend, what is to carry them to the north and south? We do not mean to say that there may not be occasional interchanges in the winds of the two hemispheres, by means of abnormal disturbances; but we do say, that such cannot be the ordinary or normal arrangement. In relation to the winds of the temperate zones, we much prefer the received view, which refers the variability of these winds to the perpetual conflict between the great equatorial and polar currents of the atmosphere.

The foregoing are a few of the physical difficulties which have presented themselves to our mind, in regard to Lieut. Maury's remarkable theory of winds. But it may be said: "After all, it is a question of *fact;* and if it can be shown, that the winds *do move* in the manner indicated, no physical objection can be of any avail." We most freely and heartily subscribe to this; but, in such a case, we must exact the most *direct and positive proofs.* With this understanding, let us see what are the proofs Lieut. Maury has adduced to sustain his hypothesis. 1. We are informed, that the microscopic observations of Prof. Ehrenberg show, that the "sirocco, or African dust," obtained from the Cape de Verds, Malta, Genoa, Lyons, and the Tyrol, contain infusorial organisms similar to those found in the southeast trade wind region of South America; and that, therefore, they must have been wafted by this wind to the northern hemisphere. In reply, it is proper to observe, that, of all forms of organisms, the infusorial are the most generally diffused over the surface of the earth, and that it would not be in the slightest degree astonishing to find the same general forms in Africa and South America. In the present state of the question, we think that the popular opinion which refers the source of the "sirocco dust" to Africa, is infinitely more rational than that of our author. This "sea dust" is the only *direct evidence* which is given in support of the idea that the winds do cross from one hemisphere to the other. Facts are not wanting to prove that westerly currents do prevail in the upper regions of the atmosphere within the tropics; and yet they bring with them no evidence that they came from the opposite hemisphere. Thus, for example, volcanic ashes ejected into the upper regions of the air in the tropics, have been known to fall to the *east* of their source; indicating that they had been carried in a direction contrary to

the surface trade winds. In like manner, small clouds have been observed by Paludan and Bruce to float in a reverse direction to the trade wind below. But no observations indicate that this return current is from the other hemisphere. We are aware that this is *negative* evidence, and should not weigh against positive proof. We are open to conviction, so soon as a *single* unequivocal fact is presented in such a form as to demonstrate that such is the *regular*, *uniform*, and *normal* course of the atmospherical circulation.

2. Lieut. Maury insists that his theory is necessary to explain why a *greater* amount of rain falls in the *northern* than the southern temperate zone, while a greater extent of *water surface* exists in the *latter*. Indeed, the great object of his hypothesis seems to have been to afford an explanation of this supposed meteorological paradox. The following extracts will place this in a clearer light:

"*Where does the vapour that makes the rains which feed the rivers of the northern hemisphere come from?*

"The proportion between the land and water in the northern hemisphere is very different from the proportion between them in the southern. In the northern hemisphere, the land and water are nearly equally divided. In the southern, there is several times more water than land. All the great rivers in the world are in the northern hemisphere, where there is less ocean to supply them. Whence, then, are their sources replenished? Those of the Amazon are supplied with rains from the equatorial calms and trade winds of the Atlantic. That river runs east; its branches come from the north and south; it is always the rainy season on one side or the other of it; consequently, it is a river without periodic stages of a very marked character. It is always near its high water mark. For one half of the year its northern tributaries are flooded, and its southern for the other half. It discharges under the line, and as its tributaries come from both hemispheres, it cannot be said to belong exclusively to either. It is supplied with water from the Atlantic Ocean. Taking the Amazon, therefore, out of the count, the Rio de la Plata is the only great river of the southern hemisphere.

"There is no large river in New Holland. The South Sea Islands give rise to none, nor is there one in South Africa that we know of.

"The great rivers of North America and North Africa, and all the rivers of Europe and Asia, lie wholly within the northern hemisphere. How is it, then, considering that the evaporating surface lies mainly in the southern hemisphere—how is it, I say, that we should have the evaporation to take place in one hemisphere and the condensation in the other? The total amount of rain which falls in the northern hemisphere is much greater, meteor-

ologists tells us, than that which falls in the southern. The annual amount of rain in the north temperate zone is half as much again as that of the south temperate."

Again he says (p. 110):

"At the seasons of the year when the sun is evaporating most rapidly in the southern hemisphere, the most rain is falling in the northern. Therefore it is fair to suppose that much of the vapour which is taken up on that side of the equator is precipitated on this. The evaporating surface in the southern hemisphere is greater, much greater, than it is in the northern; still, all the great rivers are in the northern hemisphere, the Amazon being regarded as common to both; and this fact, as far as it goes, tends to corroborate the suggestion as to the crossing of the trade winds at the equatorial calms."

The view inculcated in the above extracts is based on an erroneous physical conception in relation to the phenomena of evaporation. Lieut. Maury seems to think that the amount of evaporation depends *solely on temperature and extent of water-surface;* whereas, it is likewise intimately associated with the causes of *condensation which may be in operation, to remove the vapour which rises.* If the vapour *is not* removed, evaporation must *cease* entirely; and hence, the promptness of its removal is a most efficient cause in augmenting the amount evaporated. Now, as a general rule, *land* is the condensing apparatus, and the larger extent of it in the northern hemisphere would tend to produce a *greater* amount of evaporation from its *smaller water-surface*, than from the more extended surface of the southern hemisphere. The large amount of rain which falls in the northern hemisphere is, therefore, the natural result of the known laws of evaporation and condensation, and there is no need of supposing that the vapour is transported from the southern ocean.

This fundamentally erroneous conception seems to pervade the whole of the author's reasoning on this subject. He says, "if there had been more water and less land, we should have had more rain, and vice versa." (P. 92, par. 148.) It is obvious, that in such a state of things, precisely the *reverse* would have been the case. If there had been no condensing apparatus in the shape of land, the vapour would speedily attain a condition of maximum tension, or (as it is commonly, but improperly expressed) the air would become *saturated*, and evaporation would *cease*. Were the whole globe covered with water, there would be but little condensation, and therefore, little rain and little evaporation.

3. Lieut. Maury insists, that the distribution of rains in the temperate zones is intimately connected with his theory of the interchange of the winds of the two hemispheres. We are told that the vapours, whose condensation produce our rains, were brought from the southern ocean. Will facts sustain such an

opinion? The winds and vapours which reach the temperate zones in the manner indicated by this hypothesis, must, of necessity, blow from the *west*. Now, are the *west winds* uniformly the *rain winds* of the temperate zones? In the Atlantic States of the United States, precisely the *reverse* is the fact: the west winds are dry, and it is the east and south winds which bring our rains. The same is the case on the *eastern* shores of Asia, and of all continents situated in the temperate zones. On the contrary, on the western shores of our country and of Europe, the *east* winds are dry, and the *west* winds bring rain. Indeed, all known facts conspire to demonstrate, that in the temperate zones, the general predominance of west winds, a large body of water on one side, and a great continent on the other, are the determining circumstances of the distribution of rains. The Atlantic is the great reservoir of rains for western Europe, while the Mediterranean supplies water for the southern parts of that continent. In like manner, the Atlantic and Gulf of Mexico are the great reservoirs of rains for the Southern and Eastern Atlantic States. If the rains are more frequent in western Europe, it arises from the circumstance that the prevailing west winds happen to come from the ocean. In short, from whatever quarter they blow, the *sea winds are the rain winds*. The observations that have been collected, substantiate these facts in the most positive manner. Why should we look to the southern hemisphere for a supply of vapour, when we have it on our own shores?

Equally unfounded is the idea of the author, that the rainless districts of Africa and Asia, are connected with the course of the trade winds of the southern hemisphere. The whole of these phenomena are far more rationally explained, by considering the positions of the great continents and mountain chains, in relation to large reservoirs of neighbouring water and the prevailing winds of the country. But this is not all: Lieut. Maury's theory requires that the southeast trade winds, after ascending in the region of equatorial calms, should continue as an *upper* current over the whole space occupied by the northeast trades, and thus convey vapours to the north temperate zone. To accomplish this, they must, according to his own confession, ascend to the height of about three miles, "for that is supposed to be about the height to which the trade winds extend." (P. 113. par 205.) This is fully as high as the regions of *perpetual congelation* in those latitudes. What becomes of the vapour at such a low temperature? How can it reach the temperate zone, to be there condensed?

4. Lastly, Lieut. Maury, feeling some vague consciousness of the physical difficulty of the winds crossing and recrossing each other, after the manner which his theory demands, calls in the assistance of the *paramagnetic* properties of oxygen in relation to temperature, as discovered by Faraday. He says: "Now, is it

not more than probable, that here we have, in the magnetism of the atmosphere, that agent which guides the air from the south through the calms of Capricorn, of the equator, and of Cancer, and conducts it into the north?" (P. 118, par. 220.) Let us suppose the oxygen of the air to be endowed with any degree of intensity of paramagnetic power, how could it produce *such a result?* In the name of physical science, let it be proved, that the assumed cause acts in the *right direction*, before its adequacy to produce the required effect is dogmatically announced!

We have endeavoured to lay before our readers a candid and impartial account of the novel views contained in this volume, and have tried them by the tests of established principles in science. It has been done in no captious, carping, or hypercritical spirit. We expected to find in it some real and substantial contribution to a most important and interesting branch of knowledge. In this we have not only been disappointed, but we have been deeply chagrined and mortified that such crude ideas should go forth as specimens of American science. We do not know what may have been Lieut. Maury's early opportunities for acquiring an accurate knowledge of physics, but we have been astonished at the looseness with which he uses technical terms. For example, at page 33 (par. 24), he speaks of the "difference of specific gravity" being equal to "fifteen millions of pounds!" Again, at p. 77–78, (par. 111), he alludes to a "change of specific gravity" in the air "without a change in volume!" In the former case, the sense may be made out from the context; but in the *latter case*, it is absolutely impossible to comprehend his meaning.

Viewing the work before us as a scientific production, we think it must necessarily detract from the reputation of its author among the true men of science. This is the only tribunal by which its merits can be judged; none other is competent to give an opinion. The extremely popular style in which it is written, conjoined with other circumstances, has given it a wide-spread notoriety. The true men of science have, in this state of things, been reluctant to express any opinion in relation to its scientific merits. But the truth is, that it is time something should be done to check the torrent of pseudo-science which is sweeping over our country. The mercenary spirit of the age has flooded our land with popular and elementary books on science, which are filled with the grossest blunders in fundamental principles. Error is thus sown broadcast, and our children imbibe false conceptions which are very difficult to be removed.

We regret very much that Lieut. Maury has left his true province as an observer and recorder of facts, and as a discoverer of the currents and prevailing winds of the ocean, to become a writer on physical science. The systematic course of marine observations which he has perfected and extended over every

ocean, and the "wind and current charts" which he has thus been able to construct, constitute a good and sufficient basis for a solid and lasting fame among his fellowmen. Ultimately, his reputation must rest on this foundation; it is abundantly sufficient to satisfy any ordinary amount of ambition. Let him persevere in these labours, and he will certainly become a benefactor of mankind.

There is one feature in the volume before us, to which we refer with pleasure; it is the frequent allusions to the adaptations of the works of nature, as manifesting the plan and purpose of an intelligent Creator. To this we most heartily respond. But it really seems to us, that, in some instances, the author has given such a wide range to his imagination as to border upon the regions of the ridiculous. As, for example, when he hints (p. 74–75), that the "sweet influences of the Pleiades," noticed by the sacred writer, contains a foreshadowing of Madler's recent speculations on the central sun!!

The doctrine of final causes is indeed refreshing to the man of science; to him who loves truth for its own sake. He knows that, when he has discovered a law of nature, he has been able to comprehend a thought of its great Lawgiver, and he feels that he is there by drawing nearer to the Fountain of true wisdom. But to do this successfully, he must approach the subject in the right spirit; he must feel that he is in the presence of Omniscience. He must not arrogate to himself the privilege of divining the plans of the Creator, and then attempt to make her phenomena accord with his preconceived notions. He must study the works of nature cautiously, modestly, and submissively; and when he has discovered a clue to her laws, and traced it to its consequences, then he can look back with admiration on the minute adaptations and comprehensive interdependencies which surround him, and gladly lend his voice to the chorus which chants the "hymn in honour of the Creator."

Art. VIII.—BARNARD ON AMERICAN COLLEGES.

Improvements Practicable in American Colleges: a paper read before the American Association for the Advancement of Education, at its Fifth Annual Session, in the Chapel of the University of New York, on the 30th of August, 1855. By F. A. P. Barnard, LL. D., Professor of Mathematics and Astronomy in the University of Mississippi. Hartford, Conn.: F. C. Brownell. 1856.

We have read this pamphlet with very great satisfaction, and, if we knew nothing of the author except what might be gathered from its pages, we should pronounce him a man of sense and learning, an experienced and skilful teacher, who has made himself master of the system he proposes to improve, who has thoroughly studied it in its practical details, and brings a sound, discriminating judgment to the questions he reviews. It is refreshing to turn to a work like this, so solid, manly, and judicious, from the rash schemes and visionary projects, the crotchets and plausibilities of pretenders and empirics, who seem to consider education as only a field for experiment, and the destruction and reorganization of colleges a species of amusement as cheap and harmless as the blowing up of soap-bubbles. What adds to the value of the tract is, that it comes from a man of science, a professor of mathematics and astronomy, from whom we should hardly have expected such large and liberal views. We congratulate the infant College of Mississippi upon the possession of such an instructor, and, if all its teachers are like minded, we predict for it a career of distinguished usefulness.

After adverting to the sources from which complaints against our college system have sprung—practical men and men of science on the one hand, and scholars and philosophers on the other, and illustrating the impossibility of any radical or essential change—the pamphlet before us proceeds to unfold the fundamental notion of a college, to explain, as our German brethren would express it, the idea which underlies the whole organization, and regulates the adjustment of its parts. The writer assumes, at the outset, "that there is a specific function which the college ought to fulfil." That being settled, the details are to be determined according to their harmony, or want of correspondence with the principal end. These details may be referred to the general heads of study and discipline. What studies should be exacted, what stimulants to diligence adopted, and what tests of proficiency applied, are the inquiries to which he reduces his discussion of the first topic. The second is confined to strictures upon the different modes of government pursued in different institutions, and to some general

suggestions about a closer union and better understanding among the colleges themselves. We shall follow Mr. B., haud pari passu, through his lucid and interesting tractation of these points.

The "specific function," which he assigns to the college, "is the systematic development and discipline of the faculties of the mind, in due proportion and in a natural order." This, with Sir William Hamilton, he "makes the one end of all liberal education," and the tendency to stimulate thought, and to quicken and exercise the energies of the mind the true measure of the educational value of a subject. Our readers must excuse us here for a long extract, but the passage is too good to be curtailed:

"Now, much of the discussion which has, of late years, agitated the public mind on this subject, seems to me to have originated in an entire misconception of the proper business of a college. If such discussions had, in all cases, ended as they began, in words merely, allusion to them here might be unnecessary. But this is by no means the case. In a number of instances they have resulted in breaking up the long-established and time-honoured course of collegiate instruction, and substituting in its place something new and materially different. Nor yet could this be a subject of reasonable complaint, provided that, in the novel schemes, we could find evidence of a distinct recognition of the proper function of the college. But, so far is this from having been the case, that the entire argument, by which these innovations have been urged and indicated, has been founded on the tacit assumption, that the college has no such proper function. It has, for example, been maintained, with a great deal of warmth, that our colleges have, in later years, failed to keep pace with the rapid progress of human knowledge; that the subjects of study, to which they mainly confine the student, are in part obsolete and in part useless; that they take no account of the prospective pursuits of the young men whom they undertake to train, but subject all alike to the same unvarying intellectual regimen, and, in short, that they are far in arrear of the demands of an eminently utilitarian and practical age. We have, accordingly, been accustomed to hear the value of classical learning discussed, as if its only claim to attention lay in the directness with which it is capable of being turned to the pecuniary advantage of its possessor; and we have heard the usefulness of the higher branches of the mathematics brought to the same test by which we would judge of arithmetic, surveying, or the principles of machinery. How, it is demanded, will it help a man, in this stirring world, to have spent some of his best years in the perusal of Greek and Latin authors? How will it help him—even to communicate with his fellow-men—to have attained any degree of proficiency in the use of languages, in which men have long since ceased to communicate? Or, how will it contribute to his success as a lawyer, as a physician, as a merchant, or as a

divine, that he is deeply versed in the mysteries of mathematical analysis, or familiar with the theory of the lunar perturbations?

"All this course of argumentation rests, it will be observed, on a simple petitio principii. It is taken for granted that the college course ought not to embrace, and was never intended to embrace, any thing which should not be capable of a direct practical application, in the business of life. This postulate being granted, the triumphant conclusions of the objectors are at once legitimate and unavoidable. And not only so, but those who persist in advocating the perpetuation of our present system of college education, however in other matters they may be respectable for their intelligence, must, in regard to this, be admitted to be wanting in common sense.

"But no such postulate can be received. The studies condemned were never selected, nor is their selection now defended, on the ground that they are to form any necessary and immediate element of those pursuits by which the learner is, in after life, to gain his daily bread. They were selected because of their pre-eminent value as instruments of mental discipline. It is unnecessary for me, on this occasion, to enter into any argument, upon a subject which has already been so often and so ably discussed, and in which I should only travel over ground which has been beaten again and again. I hold it to be time that, on this question, we should be permitted to believe, that there are certain principles, too well established to leave room for further controversy; and, for the sake of explicitness, though they may now be regarded as sufficiently elementary, I will venture to recapitulate them here.

"1. Education, in its widest sense, signifies the development, discipline, and cultivation of all the powers and faculties of man, physical, mental, and moral.

"2. Intellectual training, which is that which for the moment concerns us, implies the exercise of the mental powers, in a natural order, and in just proportion, upon subjects of thought.

"3. The subjects which furnish the most beneficial discipline are not necessarily, nor even usually, those which are most immediately related to the ordinary pursuits of men in life.

"4. Though, in the process of education, we necessarily impart knowledge, yet the best education by no means implies the largest amount of that knowledge which the world calls practical.

"5. In arranging a plan of studies, designed to furnish a complete system of intellectual discipline, the question, how far the subjects selected may have an immediately practical value, is one of secondary importance. But,

"6. Other things being equal—that is to say, when the choice is between subjects of similar disciplinary character—that which affords the largest amount of useful knowledge is of course to be preferred.

"Assuming these principles to be true, I say, then, that the business of our colleges is to educate, and not to inform. And no argument, which goes to decry the freedom with which they employ mathematical or classical studies, as instruments of mental discipline, on the score that these subjects are less practical in their nature than something else might be, is valid, until it shall have been shown—a thing which has never yet been done—that this something else has an equal educational value with the studies so denounced. I am not prepared, therefore, to assent to the judiciousness of any of those proposed changes of our present plan of college education, by which the amount either of classical or of mathematical study, now exacted, shall be materially diminished. And, entertaining these opinions, I am equally unprepared to admit the propriety of abolishing the curriculum of study, or even of introducing parallel courses of study, if these courses are to run through any considerable portion of the time now devoted to college education."

We might raise a question as to the right of the mathematics to be put upon a footing of equality with the classics, but the ointment, in other respects, is so sweet, that we shall not throw away the box for the sake of a single dead fly. Something may be pardoned to professional prejudice.

The author insists upon "the necessity of a curriculum," as growing "out of the nature of things." He is not prepared to leave the selection and arrangement of studies to the caprices of pupils, or to the blind partialities of parents. Those alone who understand the nature and conditions of intellectual discipline, and the comparative fitness of different subjects to promote it, are competent to determine which shall be chosen, and the order and method in which they shall be pursued. The following is the author's statement of "the principles on which the curriculum should be constructed:"

"A curriculum being, therefore, an evident necessity, it is next in order, to consider the principles upon which it should be constructed. These appear to be the following:

"1. The curriculum should embrace the number and variety of studies properly disciplinary, and the amount of each, which is necessary to an adequately thorough intellectual training. In the choice of these, the question, how far they are practical, is to be made entirely subordinate to the higher objects of education.

"2. It should *not* embrace a greater amount than can be well and completely mastered, within the period of time over which it is spread.

"3. The foregoing condition being fulfilled, it *may* embrace other studies, chosen simply because of their value as subjects of knowledge.

"If, therefore, our course of collegiate study is to continue to

be restricted to a definite term of years, and if the space of time allotted to it is to be no more than sufficient for the purposes of a thorough intellectual training, we are evidently driven to the necessity of denying the propriety of selecting any studies, to form a part of the course, simply on the ground that they are practical."

If the following passage should afford to our readers the same pleasure which it has given to us, they will thank us for extracting it:

"Let it here be observed, that I am employing the word practical, in this place, in that entirely utilitarian sense in which it has been so much used in public strictures upon the American college system. But I am by no means of the number of those who would withhold this epithet, when understood in its largest and most liberal sense, from any of the studies which we require our students to pursue, however little affinity they may seem to have to those occupations in which the same young men are to become immersed, so soon as the period of their college education is past. Nothing can possess a higher practical value, to any man, than that which makes him a man, in the fullest sense of the word; which gives him habits of clear, systematic, and independent thought; which sharpens his penetration, invigorates his powers of reasoning, teaches him to analyze, chastens and refines his taste, subdues to method his insubordinate imagination, and confers upon him the priceless gift of lucid and forcible utterance. Considered from this point of view, the studies of the college course, however abstract, barren, or profitless they may appear to a superficial observer, possess a practical value of the very highest and most inestimable character, since their beneficial effects are spread out over the entire life, and are daily manifest in every variety of circumstances by which men are surrounded. If we compare the success in life of the few—for it is but a few after all—who have early enjoyed the advantages of the training which our colleges afford—the average eminence which they attain, in their respective professions and pursuits, the labours by which they command the attention of mankind, the variety and extent of the researches in which they engage, the boldness and success with which they push inquiry into the regions of the unknown, the controlling influence which they often exert in public affairs, and all those various modes in which a cultivated mind displays its superiority over matter and over other minds—if we compare these things with the degree to which the same things are, upon the whole, true of those who in youth have been denied similar advantages, we cannot hesitate to attribute the observed results, in the main, to that early mental discipline which is furnished by these very studies, which we are so accustomed to hear denounced as wanting in practical value. Nor will it be any reply to this, to point, on the one hand, to those, for we need not go far to find them, whose college edu-

cation has failed to lift them above a respectable mediocrity of standing; nor, on the other, to those more remarkable individuals who have risen to eminence in spite of the deficiencies of their early education. If nature has made men essentially small, no education can render them great; or if gifted youths choose to neglect their early advantages, or to idle away their subsequent lives, the consequences of their neglect, or their indolence, must rest upon them. To use again the names of such men as Franklin, and Watt, and Hugh Miller, as arguments to depreciate the value of collegiate education, is no more to the purpose than it would be to declaim against common schools, because some persons have taught themselves to read. The true form in which to place the argument is this: If these men have done so much without education, what might they not have done with it?"

Having settled the principles which regulate the subject, Mr. Barnard institutes an inquiry as to the extent to which they are exemplified in the actual arrangements of our American colleges. These colleges are all modelled on the same general type, and what is true of one is, for the most part, true of all. The first thing which strikes one, in looking at their course of studies, and comparing it with the standard of past requisitions, is its undue extension in the direction of practical utility. The new exactions have not been prescribed for the purpose of making better scholars, or adding intensity to intellectual exercise, but purely on account of the knowledge which it is supposed will be imparted. The end has not been to train, but to stuff the mind The departments from which the additions have been made, indicate the principle which has determined the selection. In the mean time, the period of study has remained unchanged, and a boy is expected now to accomplish in four years nearly double as much as our ancestors were able to achieve. The "march of mind" has grown into a proverb, but we shrewdly suspect, that, however the race may advance, each individual has to begin at the same point and pass through the same stages of intellectual growth. We much doubt whether boys now are any cleverer than they were of old. What our fathers could not do, it may be reasonably hinted, is not apt to be well done by ourselves. This, then, is the state of the case: our colleges, in accommodation to the spirit, and perhaps also to the necessities of the age, have undertaken to combine two functions, and to execute them both in the same time which was previously deemed sufficient only for one. It is obvious that in this, as in every other case, the attempt to do too much can end in nothing but failure. What shall be done? The answer to this question elicits the first "improvement of American colleges," to which Mr. Barnard adverts. He is not willing to sacrifice the sciences, nor to curtail the subjects eminently disciplinary. He, therefore, proposes one or both, for they may be readily combined,

of two schemes; either to lengthen the period of residence in college, or to increase the exactions for admission. If we undertake to do double work, we must have double time to do it in, or double strength to do it with. By the first scheme, the college loses nothing of its disciplinary character, but only superadds another function. By the second scheme, it transfers a part of its disciplinary work to the schools below, and begins at a higher point—the first scheme gives the double time; the second, the double strength. For ourselves, we should prefer to unite them, and then we should have a reasonable guarantee that the work will be done. If, however, neither of these changes be admitted, Mr. B. does not hesitate to say, in effect: "Lop off the sciences. Do not sacrifice the fundamental notion of a college, 'its being's end and aim,' to perpetuate a sham. What is done, let it be well done, and if a choice must be made, select that which is most important."

There appears to us to be a little inconsistency between the author's principle, that the one exclusive end of the college is the harmonious development of the faculties, and the recommendations which contemplate the extension of its curriculum beyond the exigencies of mere discipline. He feels the importance of *training*, and justly gives it the *first* place; but he also makes provision for the communication of knowledge on its own account. The end of the college, consequently, as he would have it organized, by an extension of time or an intension of study, is not single, but double; it is discipline, primarily—instruction, secondarily: both ought to be included, and the perfection of the scheme consists in combining them in the order of their relative value.

These opinions are sound, but we should prefer to modify the form in which Mr. B. has stated them, though we heartily approve the manner in which the extension of the college terms is proposed. We would say explicitly, that "the specific function of the college" is twofold. We cannot agree with Sir William Hamilton, profoundly as we reverence his name, that the "harmonious development of the faculties is the one *exclusive* end of education." It is the *first*, but not the *exclusive* end. There is a period, consequent upon the expansion of the mind, when habits of thought and inquiry have been formed, when the taste has learned to discriminate, and the fancy been quickened into life—a period of comparative maturity, in which the man is prepared to relish knowledge for itself, and to pursue it for the luxury of possessing it. Truth is the end of the understanding, as virtue is of the heart. Man was made to *know*. The mind, as the instrument of knowledge, must first be tempered and sharpened, which is done by training; and then it may be used, and used efficiently, in making permanent acquisitions. What is called development is nothing but the culture by which it is fitted to its end. Discipline is directed to two points; first, the enlargement, expansion, or

growth of the understanding—it is impossible to indicate the change without borrowing terms from the analogies of matter,—and next, the formation of habits, or principles of action, which, to be just and proper, must be in harmony with the laws of mind. But when the mind has been developed, and its habits established, its energies are not without a purpose, nor is that purpose an increase of their own intensity. They are designed for the apprehension and discovery of truth, and the highest of all motives to intellectual activity, is the love of truth for itself. The *matter* of thought, according to the reasoning of Sir William Hamilton, is chiefly to be prized as an instrument of eliciting the energy of thought. Whatever calls forth most energy is most valuable. Hence he does not hesitate to say, that a "waking error is better than a sleeping truth;" that an error which sets men a thinking is better than a truth mechanically received. To this proposition we can not assent. Error is always poison, and the activity which it stimulates can never be healthful. Stagnation of thought is also a great evil, but we cannot help believing that it is better not to think at all than to think wrong. Wherever there is error, there is some violation of the laws of mind; it is the penalty of intellectual transgression; and the development it promotes is, accordingly, in the direction of unnatural habits. It is disease, not strength. Energizing, therefore, is not the supreme good of the intellect; but *energizing* in *truth*. The mind attains its perfection only when it attains sound wisdom and discretion. Knowledge and mind are not to be contrasted and opposed, nor are they to be separately conceived; they imply each other; without mind, no truth; without truth, no mind; and the synthesis of mind and truth is *knowledge*. The highest form of culture has not, consequently, been received, until there has been awakened a spirit of speculation, which loves knowledge for itself, and seeks the perfection of its being in the pursuit and possession of it, as the complement of intellect. The culture of mere development or training is subsidiary to this; it expands and drills, matures in strength and habits, that this strength and these habits may be concentrated upon truth, that the man may be qualified to know. Just as in the moral nature, the ultimate end of education is *action*, so in the intellectual, the ultimate end of discipline is knowledge. And the reason, why an academical education is called *liberal*, is precisely because it leads to the culture of knowledge for itself; it makes the possession of it its own end. Not that the process of development is, by any means, arrested. The mind continues to grow as long as it continues to act. Exercise always invigorates; but the exercise is now taken, not for the sake of health, but for the pleasure which it gives. The mind delights in the object, and is drawn to it by an impulse analogous to the appetite which the body has for food. A complete system of education must, there-

fore, provide for this double end or function. It must look first to the discipline of the mind, and select and arrange the subjects of study with a special reference to their aptitude to evoke the dormant capacities and to impart to them healthful and vigourous habits of action; it must look, in the next place, to the spirit of liberal inquiry, and provide the means of gratifying the curiosity which its previous culture has awakened. It must, in other words, first train, and then instruct; it must give both development and knowledge. This, accordingly, is what is attempted in the most perfect scheme of education which anywhere exists, the scheme that obtains in Germany. The gymnasia there, are eminently schools of training. The universities, on the other hand, are schools of knowledge. They still continue the discipline which was begun in the gymnasium, but their principal design is to give the opportunity and furnish the means of prosecuting philosophy and letters as liberal pursuits.

Now, the American college is a mixture of the gymnasium and university. From its first establishment in the country, all its arrangements have been made with the evident design of achieving both ends. It is the last stage of a liberal education. It is presumed, not only to have trained the mind, but to have awakened the spirit of liberal inquiry; to have given a taste of the sweets of knowledge, and to have inspired the honourable ambition of seeking it as at once the health and beauty of the soul. We give no opinion as to the wisdom or expediency of the theory, but the fact seems to us unquestionable, that this is the true theory of our colleges. This is the key to the enormous exactions of their course of study; the secret of their magnificent promises to teach all that can be known. They undertake to do what in Germany is done by different institutions, and institutions organized upon different principles; and when we are required to state the specific function of an American college, we should never overlook this peculiarity of their structure. Mr. B., throughout the tract before us, has evidently seen and felt it, but he has not explicitly announced it. He has treated of the selection of studies, and very justly and judiciously, in reference to the gymnastic function; he has given it the prominence it deserves, but his recommendations obviously presuppose the other function, and indicate the only way by which it can be adequately fulfilled. But still, with him, this other function is something foreign, something that does not enter into the essential idea of the college, and something introduced rather from a concession to the spirit of the age, than from the nature of the thing. Let it, then, be distinctly understood, that this is a part of the work which our colleges propose to do; that they are treasuries of knowledge as well as halls of discipline: let this be explicitly stated and clearly apprehended; and then the question arises as to the arrangements by which both functions can be most successfully

performed. Mr. B.'s suggestion, that a longer time is required, is too obvious to admit of doubt; and the other suggestion, that a better preparation, previously to entering, is desirable, is equally undeniable. But shall the college undertake to discharge both offices synchronously? Shall it carry on, side by side, a set of studies which are taught for the purpose of awakening the energy, and another for the purpose of imparting the matter of thought?

It is here, we think, that our American colleges are grievously at fault. We do not object to them for undertaking to initiate their pupils in the mysteries of science; but we do object to them, that they have absurdly blended what should be kept asunder, and, in consequence of the unnatural combination, have entailed inevitable failure in both. That portion of the physical sciences, whose results are rather the classification of phenomena, than the discovery of general laws, have not only very little value as a discipline, but are apt to be positively disgusting, in the earlier stages of education, before a generous curiosity has been excited, from their enormous exactions upon the memory. Those departments of physics, on the other hand, which are conversant with laws and causes, possess a higher educational value; but we are inclined to think that their chief interest depends, not upon the energy and intensity of mind that they elicit, but upon the pleasure which they give and the reflections they suggest. They are palpable illustrations of order and design. The "great theories" they establish are beautiful subjects of contemplation in themselves, and in tracing the harmony and dependence of the various parts of nature, we feel that knowledge is its own reward. But the very fascination of these studies is a proof that they are not as intensely gymnastic as those which turn the mind upon itself. They may afford instances and illustrations of the inductive process, but this is not like studying the laws and conditions of that process as a matter of reflection. They may impart a dexterity, analogous to mechanical skill, in conducting observations and experiments, but they never reach the height, and dignity, and intensity of pure thinking. We cannot withhold the opinion, therefore, that the physical sciences are not the aptest instruments for the discipline of mind. They should not be made the meal, but the dessert. They should be postponed until they can be pursued as a matter of rational curiosity, when they become an amusement or relaxation from the severe demands of reflection. They are a good condiment, but a poor diet. "On earth there is nothing great but man; in man there is nothing great but mind."

The improvement, therefore, which we are disposed to recommend, is the introduction of two separate and distinct courses in the college, which might be called the gymnastic and the liberal. The first should embrace a period of three years, and be exclusively devoted to gymnastic exercises, or to the elements prepara-

tory to the pursuits of science. The second should consist of studies which the student might desire to prosecute as a man of letters or of science. The term, here, would depend upon the number of subjects pursued. At the conclusion of the first course we would give the pupil the first degree in arts; at the conclusion of the other, the second degree. None should be allowed to enter on the second course, who had not completed the first, and even with those, the entrance should be purely voluntary. This arrangement would fulfil the conditions involved in the notion of an American college. It would have all the advantages, without the inconveniences of what is usually understood to be the university plan. The influence of a body of graduates, imbued with the love of knowledge, and trained to habits of diligent and persevering study, could not fail to be happy on the raw and inexperienced freshmen, who have just come from their schools and their homes, with very imperfect notions of what they have come for. The experience of every graduating class, at least of the clever men, is that they leave college just as they are prepared to appreciate its advantages. As soon as they have learned to study, and are beginning to glow with a generous enthusiasm, they are called away and deprived of the opportunities of indulging their tastes. We think it cannot be doubted that our colleges stop too short. The scheme proposed would detain none but generous and manly minds, those that were desirous to enter the temple and to worship with a pure devotion. The οἱ πολλοὶ would go no further than the first degree. A voluntary course, therefore, engrafted on the gymnastic curriculum, seems to us to be the best remedy of existing evils. This expedient, while it developes the idea of the college, and enables it to fulfil the law of its being, adapts it also to the spirit and demands of the age. Those who wished to cultivate the practical sciences, could have the privilege of doing so, and of doing so to their heart's content. This suggestion, as we have already intimated, is in harmony with the whole spirit of Mr. B.'s reasoning, and with an articulate recommendation about the master's degree. He has not, however, enunciated his own opinion precisely in this form.

We would make the classics indispensable to a degree in both courses, and we think that a little reflection will evince that they are justly entitled to this distinction. As a discipline, their importance cannot be estimated too highly. They are suited to all stages of the mind's progress, and to every form of its activity. They have gentle stimulants for the dormant capacities of the child, and higher demands for the expanding powers of the boy; the energies of youth find in them the fittest materials for exercise, and manhood resorts to them as a food, a solace, and a charm. There is no department of our being to which they do not address themselves. From the first dawn of intellect, in the simplest exercises of apprehension and memory, to the full maturity of reason,

they attend our course, ministering to every faculty according to its want, and conducting us by easy and gentle gradations to the harmonious development of our nature. They give the infant memory its best lessons; the child's understanding its most healthful exercise, the youthful taste its richest models, and the matured intellect its profoundest thoughts. They cannot be dispensed with. Nothing can supply their place as a means of mental discipline. But they are not less valuable as a body of philosophy and literature. There is a freshness in them, a power to quicken and interest, which no other compositions possess. They have in literature the vivacity, energy, and enthusiasm which distinguish youth as contrasted with age. Who has not felt, as he pored over the divine dialogues of Plato, or tracked the remorseless logic of Aristotle, that a new life was stirring within him? Who has not kindled at the burning periods of Demosthenes, or been lifted to loftier views of history by the pregnant hints of Thucydides? In these languages, moreover, we are really studying the very texture of the mind. Language is nothing but the reflection of thought; and in the origin, derivation, and complication of words; in the manifold shades and variety of meanings; in the structure of sentences, the dependence of clauses, the force of particles, the relations indicated by cases and prepositions; in all that constitutes the peculiarity of speech, we are tracing the operations of that invisible principle, of which it is the product. The languages of antiquity are not fossil remains; they are not like the dead and dried specimens of a cabinet or museum. They are still instinct with a living power, and reveal to us the mysteries of mental being. They are mind made palpable. That the benefits, in this relation, of classical pursuits, cannot be replaced by the study of our mother tongue, arises from the nature of the case. "Our mother tongue," as Professor Pillans has very justly remarked, "is so entwined and identified with our early and ordinary habits of thinking and speaking, it forms so much a part of ourselves from the nursery upwards, that it is extremely difficult to place it, so to speak, at a sufficient distance from the mind's eye, to discern its nature, or to judge of its proportions. It is, besides, so uncompounded in its structure, so patchwork like in its composition, so broken down into particles, so scanty in its inflections, and so simple in its fundamental rules of construction, that it is next to impossible to have a true grammatical notion of it, or to form indeed any correct ideas of grammar and philology at all, without being able to compare and contrast it with another language, and that other of a character essentially different." Here we may take occasion to commend the admirable discourses from which this extract has been given. They may be found appended to the very interesting account which Professor Pillans has published of the monitorial system of instruction as carried out and applied by

him, with signal success, in the High School of Edinburgh. But it is time to return to our author.

The next topic he discusses is that of the "stimulants" by which young men should be incited to intellectual effort. He has no sympathy with the mawkish sentiment, which would discard all appeals to ambition and to the natural desire of pre-eminence as essentially immoral. Our nature must be accepted as it is, and it is the part of wisdom to make one element of it counteract the evil of another. Ambition may be a sin, but indolence is certainly a greater one, and we can see no reason why the less evil should not be permitted to extirpate the greater. We are glad to have Mr. B.'s approbation of the scheme adopted in the South Carolina College, for marking what he calls absolute merit. That scheme, we take the liberty of saying, originated with the late Dr. Henry, and has been attended, in practice, with the happiest results.

"It seems to be desirable that some means should be devised for stamping absolute, as distinguished from relative merit. We ought to be able to say of a scholar, not merely that he is better than another, which, if the entire truth were known, may after all be but insignificant praise; but that he is capable of passing with honour some definite and intelligible ordeal, such as may be provided by requiriug of him the performance of tasks of ascertained difficulty.

"Such tasks may be prepared in the several departments of instruction by the officers respectively in charge of them; and if no individual of a class shall be found equal to the highest, or the second, or third in grade of difficulty, the corresponding honours may for that time be withholden. A plan like this will make the members of every class competitors, in a certain sense, with all who have gone before them; and its tendencies must obviously be to stimulate effort to a much higher degree than where the competition is only for the stamp of a certain nameless and indefinite merit, in no instance clearly ascertained.

"It is worth considering, moreover, that this plan will remove, in great measure, the moral evils which are probably inseparable from a competition immediately personal; since, when the struggle is for absolute and not for relative superiority, the success of one aspirant to honour does not involve the necessary humiliation of another."

As to the tests of proficiency, the topic to which Mr. B. next adverts, he has some observations in which we cordially concur, and others from which we must totally dissent. The plan which generally obtains in the American colleges, of estimating scholarship by the average value of the daily recitations of the term, combined with an examination which is hardly equal to a recitation in time or thoroughness, cannot be too severely condemned. It is altogether deceptive and fallacious. To say nothing of the

tricks and artifices by which indolence escapes detection, and ignorance conceals its shame, suppose each lesson thoroughly conned, the knowledge is fragmentary and detached, and the accuracy with which details are successively acquired only for a temporary purpose, is no security that the subject is mastered as a whole, or that the connection and dependence of the parts are at all adequately apprehended. The parts may be recited, and well recited as parts, and yet the whole may not be impressed upon the mind. Mr. B. thinks that the evils of this system might, in some degree, be obviated by giving the students a voice in the assignment of college honours. They would be likely to know who had been faithful and conscientious students, and who had resorted to stratagems and evasions. They might save the college government from impositions; but still the root of the difficulty is not really touched. They have nothing but fragments to judge from, and the conclusion would be obviously unsound, from special accuracy to general proficiency. In addition to this, other evils of a very serious nature might be introduced. Students are but men, and what security is there, that their testimony will always be awarded to merit? Is it not possible, that they might be influenced by personal and private feelings, and that popularity may carry off the prizes which belong to excellence? Is there not danger that college honours may become the objects of electioneering expedients, and that diligence in winning favour may outstrip diligence in study? We cannot, therefore, assent to this suggestion. The true remedy, in our judgment, is to abolish the whole system, and to institute in place of it, the only adequate tests of proficiency, real and searching examinations. The only way to ascertain the accuracy and extent of a man's knowledge is to require him to express it; and if he cannot express it, he is not to be presumed to have it. "De non apparentibus et non existentibus eadem est ratio." The Virginia University has certainly adopted the right plan, and if all our colleges would imitate it, with respect to the rigour and minuteness of their examinations, they would soon find that they had put new life into their systems, and that they had done more to promote diligence and intensity of study than by all their contrivances of demerits and reports. Here is where they have all failed. They have practically suppressed the examination. They have left off calling the student to an account, at the close of his term, of his stewardship in it; and the absence of responsibility has produced in his case, what it does in all others, indifference and neglect. Our American colleges have been modelled upon the type of Cambridge in England, but strange to say, the most efficient feature in the English system is precisely the one we have omitted. All improvements will be abortions, as long as examinations are underrated. That Mr. B. is at one with us on this point we collect from the following passage:

"I have no hesitation in expressing the belief, that, unless these exercises can be so modified in their plan and their thoroughness, as to become in fact what they profess to be in name, it would be better that they should be abolished entirely. They ought to be the means of ascertaining how faithfully the student has employed his time, and what is the extent of his knowledge of the subject with which he has been occupied. To this end, they should in the main be conducted in writing, and the same tests should be applied in every individual case. These tests should be carefully prepared beforehand, in such a manner that they may show at once the range and the depth of the student's knowledge. Time enough should be allowed to render the trial a thorough one. The tasks allotted to each examination-session should only be made known after the session has commenced; and no one should be permitted to depart until he has completed his performance. Such performances may be fairly relied on as presenting an exhibit of scholarship both positive and comparative; and in this respect they are infinitely preferable to any record of daily recitation which can be kept during the period of instruction."

We are happy to say that the plan here recommended has been adopted in the South Carolina College, and, so far as we know, there is but one opinion among the students and faculty, as to its efficiency in stimulating study.

Mr. B. next takes up college degrees, and vindicates them from the exceptions which a misapprehension of their nature and import is apt to suggest. What he says about the master's degree, coincides precisely with what we have recommended upon the same point.

His remarks upon college government are entitled to grave consideration, though we are not prepared to join in his condemnation of the dormitory system. There are evils connected with it, but the question is, whether, upon the whole, it is not more favourable to uninterrupted study, and to the formation of a manly and self-relying character, than any scheme which contemplates less independence and lesss exemption from outward supervision. Some, perhaps, abuse their liberty, but it is made the instrument of a most important moral discipline to a great many others. We suspect that the character is apt to be wanting in energy and decision, which has been moulded by influences that operate more through outward restraint than the inward education of principles. The young man should be trained to govern himself, which cannot be done without giving him opportunities of transgression. A manly virtue must be purchased at the price of corresponding trials: and where there has been no temptation, there is no security for stability of principle. It seems to us that the best arrangement which can be adopted, is to put the students under the pastoral care of a pious and able chaplain, who can accommodate

his instructions to their circumstances, point out affectionately the dangers to which they are exposed, intimate the principles which they should endeavour to incorporate into habits of life, and, by appealing to their moral and religious sensibilities, persuade them to use their liberty as the trial of their virtue. The influence of such a man, operating secretly, silently, and powerfully, upon the hearts, understandings, and consciences of the young, is, in our judgment, better than the most vigilant police, or the most intimate relation and intercourse with private families. The world does not present a nobler field of pastoral labour than in the halls of a college, and there is no charge on earth in which the work is more grateful, more appreciated, or more its own reward, than among the students gathered there. They reverence religion and its ordinances; they reverence the power of a holy life; and their souls are tenderly responsible to the gentle accents of pastoral admonition and persuasion.

The attempt to govern by mere police Mr. B. very justly condemns. Not that vigilance is unnecessary. When disorders occur, they should be punished, and punished promptly. But the impression should never be allowed to obtain, that the faculty are spies upon the students. We concur cordially in what Mr. B. has said on the subject:

"The difficulties of college government grow mainly out of the questions, how shall offences be prevented, and how, when they occur, shall offenders be treated. In regard to the first point, I am persuaded that little is gained by holding out the idea that the faculty expect to accomplish much by the mere exercise of vigilance. This is directly to invite a trial of wits between the two parties, in which the advantages are all on one side; and it is to give birth to a feeling that good order is not a matter in which the governors and governed have an equal interest. My experience satisfies me that more may be accomplished by appealing to the sense of propriety of which no young man is wholly devoid, and by professing to *expect* that a community of young gentlemen will behave as gentlemen should, than by permitting them to suppose that any reliance is placed upon any degree of watchfulness which the faculty have it in their power to exercise over them."

There is one evil in our colleges to which Mr. B. has not adverted, which operates seriously to the injury of the students, in prompting them to forego the advantages of their situation. We allude to the absurd jealousy with which private and confidential intercourse with the faculty is virtually interdicted. It is not that there is any hostility to the officers of the college, or an inadequate appreciation of the benefits of their society, but the sentiment predominates that he who seeks it is influenced by low and mercenary motives; and the consequence is that the fear of dishonourable imputations is a wall of separation between professors and pupils.

This is extremely unfortunate. If this sentiment could be eradicated, and the feeling become general, that officers and students constituted *one* body, that their interests were *one*, their aims one; if they could be brought to cherish the sympathy which is the natural expression of unity, the problem of government would soon be solved. Much of the disorder, especially of that kind which may be characterized as mischief, arises from a sort of antagonism, which, although it argues no malice, is yet productive of considerable annoyance, and is a constant impediment to study. The disappearance of this senseless and ridiculous impression would be the disappearance of nine-tenths of what are called college tricks. The idea of the college as *one whole*, a homogeneous society, of which faculty and student are alike members, with different functions to perform, this is the idea which must take possession of the minds of the young, before any institution can put forth all its vigour and exert all its efficiency for good; this is the idea which could and would regenerate our American institutions. The relation of teachers and taught should be a relation of confidence and love; and, next to our parents and our God, according to the old French proverb, the person of an instructor is to be revered.

Mr. B. closes his dissertation with some remarks upon the question, "whether it is possible to do anything to improve the relation in which our colleges stand to each other." This is certainly a very grave subject. It is extremely desirable that some scheme should be devised, by which the various institutions of the country might be rendered parts of one harmonious whole. There ought to be concert and unity among them. Efforts at improvement, in one quarter, are no doubt often repressed by backwardness, in another, to join in the process. Temporary success rules the hour, and the real interests of learning are sacrificed to the reputed interests of the day, and in the unnatural rivalry which is engendered, the competition of numbers ends in the degradation of the standard of scholarship. We are sorry that our space does not permit us to quote the concluding observations of the pamphlet. They breathe a spirit of enlightened liberality which will find an echo in every generous breast. We take leave of Mr. B. with our grateful acknowledgments for the pleasure he has afforded us. His little work is a seasonable contribution, and its value is in the inverse ratio of its size. We sincerely trust that those who are interested in the prosperity of education, will not fail to procure it and to study it.

We cannot dismiss this general subject without submitting a few thoughts upon the prospects and policy of the South Carolina College. The intimations are not obscure or doubtful that efforts will be made to detach it from the patronage of the Legislature. The attack will come from very different quarters; first, from real

friends of learning, who are opposed, on principle, to the superintendence of education by the State, and next, from the pretended friends of the people, who, in their zeal for popular instruction, will not scruple to denounce the college as a fraud upon the poor, for the exclusive benefit of the rich. If the counsels of folly shall finally prevail, it will not be through the force of the open and manly assault of the first class, but through the triumph of demagogues, affected by appeals to low and vulgar prejudices, and to coarse and wicked passions. We respect the opinions of men who, like Adam Smith, and perhaps we may add, Dugald Stewart, are inclined to remit the interests of higher education to individual effort, or to voluntary combinations, or who, like most of the clergy of the country, are disposed to entrust the whole subject to the agency and direction of the church. But we have no sympathy with that miserable tribe of grumblers, who, like Judas, are eternally deploring the "waste" of what might have been sold and given to the poor, not that they care for the poor, but because "they carry the bag," which being interpreted, means that they have an exclusive eye to their own interests. These are the men who make mischief.

The policy of a State college turns upon three questions: Is it a public benefit? Is the good derived from it of the kind which it is the office of the State to provide for? And is it, in degree, an adequate compensation for the means expended? The first question is answered in the negative, by those who seek to represent the college as an establishment for the rich, or a privileged class, to the exclusion of the poor. The second, by those who think that education is a private or ecclesiastical function; and the third, by those who think money the chief good of a commonwealth. That they should all be answered in the affirmative, we think susceptible of the clearest proof; but our limits at present, will permit us only to touch upon the first, and that chiefly in a single aspect—the reflex influence of the college upon popular instruction. We are prepared to reverse the brocard, the college is for the few; and maintain the thesis, that it exists preeminently for the people. It was called into being for their good, and is, in the highest sense, a public benefit. Those whom it educates, it educates not for themselves, but for the State, their country, and their God. To whatever extent enlightened men are a blessing to any community, to the same extent the college promotes the welfare of the whole commonwealth in every succession of scholars that it sends out. The national character is raised; the tone of sentiment and thought made healthful; and the thousand cords of sympathy which bind the members of society together, are like so many wires which transmit the electric influence of light and knowledge to every nook and corner of the land. The effect is a silent process of education, which, in awakening thought, soon creates a demand for instruction, and the demand is never satisfied until a general system

of common schools is put in operation. The higher education, as a comprehensive scheme, precedes the lower. The college gives rise to the common school, and not the common school to the college. Those, therefore, who are attempting to cripple or to destroy the college out of pretence of zeal for the instruction of the people, are taking the most effectual measures to defeat their own ends. Let all higher education be extinguished, and barbarism would soon succeed. The schools which are now scattered through the State, their high character and general efficiency, the clamour which is everywhere raised, and justly raised, for universal instruction, have all been stimulated by the influence of the college. Had it not been established, or had not those whom it trained have received a similar training in other halls, South Carolina would have presented the same spectacle to-day which she presented fifty years ago. We are happy in being able to confirm these opinions, by the authority of one who is entitled to be heard:

"Popular education could not be the starting point of education, for the ignorant masses are of necessity incompetent to plan and adopt measures for their own improvement. Individuals elevated above their age and the people around them, by superior genius, and a peculiar inspiration of thought, called out by circumstances sometimes extraordinary, and often accidental, took the lead. Homer will always remain a mystery; and yet Greek art, letters, and civilization must be referred back to his immortal work as their inception. Socrates is a miracle of humanity, and stands alone; but he is the acknowledged father of an undying philosophy. Bacon was the only man to write the Instauration of the Sciences, and the Novum Organum. Christianity itself, the divine religion, made its advent in the solitary Jesus of Nazareth.

"From the solitary poet, philosopher, and reformer, proceeds the quickening and regenerating truth, first of all to be received by the few. Then by association the truth gains power, is widely disseminated, and, finally, permeates the masses of society. Such is the progress of knowledge and education. The first period shows us the solitary gaining the few. The second period shows us the beginning of association preparatory to the universal diffusion of knowledge. The third period is that in which association will be perfected, and the universal diffusion of knowledge take place. In universities we have the association which in the end creates common schools, or schools for the people. * * *

"The third point to be noticed in modern educational development, is popular education. This is a necessary part of the educational movement, and must follow the proper university development. We have shown how the few great thinkers must first appear; how they naturally become the educators of their day, and permeate all following times with the quickening energy of their thoughts. We have shown how naturally and inevitably

learned associations arise from these, and grow into educational organizations. It is all a work of genius and free thought. It is a light struck from the heart of humanity itself. It cannot be isolated, it cannot be confined; the very law of its existence is that it shall spread itself far and wide. Disciples gathered around the old philosophers to be taught; they in turn could not but teach others. Thousands crowded the halls of the scholastic universities, drawn by the charm of knowledge, themselves to be graduated as teachers; the very condition on which they were taught was that they should teach others. Education has never been confined to rank. The call to thought was breathed by the winds, murmured by the streams, scattered abroad by the light, written in the beauty, harmony, and glory of creation, and spoken in the inward sense and longing of the human heart. Education could not begin, without, in the end, becoming universal.

"The modern university exemplifies this principle of necessary diffusion. The university must be supplied from the gymnasium; the gymnasium must be supplied from the broad and deep reservoir of the people. But a rudimental training becomes necessary as a preparation for the gymnasium. Here, then, is the necessity of a general rudimental education. Then arises a supply of a different kind moving in the opposite direction—a supply of teachers. The taught must teach, or the whole system breaks to pieces. Hence, the university supplies teachers not only for itself, but for the gymnasium also; and the gymnasium must, directly or indirectly, supply teachers for the people. With the multiplication of educated men, entering into all the offices of society, the charm of education is felt, and its necessity perceived. The genial inspiration spreads, and a whole people is pervaded by the spirit of education. Popular education is the natural and necessary result."*

Let truths like these be once firmly rooted in the popular mind, and the college is safe. The people will cherish it as their best friend.

The policy of the college, on the other hand, is to vindicate its claims to confidence, by enlarging the sphere of its usefulness. Education has now reached a point, thanks to the college for it, which will justify the improvements we have ventured to recommend. The standard of admission is, perhaps, high enough, but the present organization fails to accomplish as efficiently as the change would enable it to do, the gymnastic training, and the liberal culture, which in it, as in every other institution of the country, are awkwardly combined. Let the college superadd the main features of what is called a university, and admit to this

* Tappan, in American Journal of Education, March.

second course none but those who have completed the other, in itself or some other institution; and then it will offer the advantages of voluntary studies to those who are at once qualified to select and appreciate them. The objections to the university, as succeeding immediately to the grammar school, are absolutely insurmountable. Banish institutions with a fixed and enforced curriculum, and you banish the most important part of education. While minds are yet raw and inexperienced, before tastes are formed and habits of diligence contracted; while yet "the military discipline of thought" is a positive restraint, it would be worse than idle to leave the young to themselves, or to the general suggestions of their parents. They must be *made* to study, and made to study precisely the things which, from the concentration of energy they demand, are at first irksome and repulsive. They must first feed on "bitter roots, before they can enjoy the pleasant and wholesome fruits." What Sir William Hamilton says of the classics, is true of every strictly gymnastic study: "The higher and more peculiar its ultimate advantages and pleasures, the more it educates to capacities of thought and feeling, which we should never have otherwise been taught to know or exert, and the more that, what it accomplishes can be accomplished by it alone, the less can those, who have had no experience of its benefits, ever conceive, far less estimate, their importance." On such grounds we feel ourselves bound to oppose any and every scheme which would strip the college of its disciplinary feature. The first degree we would have all compelled to strive for, and to strive for in the same pursuits. After that point we would leave them to themselves, putting the college in a condition to give the amplest instruction which they could receive. We would open it, in its university features, to the bachelors of every other college in the land. They might study what they pleased, but if they desired to be masters, we would have a certain number of departments in which they must be skilled. In this way, it seems to us, that the college could be made to answer the expectations equally of the friends of letters and of science. Its advantages would become so palpable and tangible, that, after a few years of successful experiment, the clamour of opposition would be silenced forever. It would proclaim itself to be what it is now, a *public benefit.*

Art. IX.—MEMOIR OF DR. HENRY.

Eulogy on the late Honourable John Caldwell Calhoun, delivered at Columbia, South Carolina, on Thursday, May 16, 1850. By Robert Henry, D. D., Professor of Greek Literature in the South Carolina College. Published at the request of the Committee of Citizens. Columbia, S. C.: Printed by I. C. Morgan. 1850. Pp. 59.

This was the last public effort of Dr. Henry, though the interval which elapsed betwixt its delivery and his death was too long to justify us in speaking of it as "the last voice of the swan, chanting its own monody"—illa tanquam cycnea fuit divini hominis vox et oratio. Yet we contemplate it with the same melancholy interest with which the friends of Crassus went into the senate-house, and gazed upon the spot where the orator closed his splendid career. When the eulogy was first published, we admired it as a just and beautiful tribute to the character and services of its illustrious subject; we cherish it now, as reflecting on every page the lineaments and features of its gifted author. It is an accurate transcript of Dr. Henry's mind; so exact that those who are familiar with his habits of thought, will see, in peculiar turns of expression which occasionally occur, and in the general air of the whole composition, the person of the author so vividly depicted as to produce the illusion of an actual conversation, a momentary belief that they are not reading a production of his pen, but listening to a discourse from his lips. We do not allude to such general qualities as severity of taste and richness of classical allusion; these are not personal characteristics; they are the ornaments, but not the essence of thought. There was a compactness in Dr. Henry's mode of thinking, a tendency to consolidate the results of his reflection in brief and pregnant maxims, which always seemed to us the most striking feature of his mind. It was exactly the quality which gives a charm to the histories of Thucydides and Tacitus. He had caught their spirit from a long, patient, delighted study of their works; and while he abhorred all vague and barren generalities, which cheat the shallow with the show of wisdom without the substance, he freely expressed himself in sententious aphorisms, which, weighty as they were brief, commended themselves to every man's judgment. He seized at once upon the principle which pervaded the details of a subject, and the conciseness with which he announced it, was but a reflection of the energy with which he conceived it. The eulogy before us abounds in illustrations of the quality in question. The biography, even in its most minute and trifling details, is enlivened by the spirit of philosophy. There is no set effort to be profound; no attempt at

abstruse reflection. All is natural and easy; and yet he who should be tempted to pronounce it superficial on account of its simplicity, or commonplace on account of the apparent obviousness of its thoughts, should be reminded that, as it is the highest accomplishment of art to conceal art, so it is the highest proof of genius to conceal the traces of labour in its production. In moral subjects, the true is always natural, and when properly presented, will always seems obvious. Pascal's reflections are none the less rich and none the less profound, because they occasion in us surprise that we had not thought of them before. As a general rule, what costs the reader labour, costs the writer none; and what costs the writer labour, costs the reader none. Ease and grace, like the inspiration of true eloquence, "come to us after we have wrestled all night." They are nature, but nature richly and laboriously improved.

Our design, however, in placing the eulogy on Mr. Calhoun at the head of our article, is not to make it the subject of our criticism; the judgment of the public has long ago forestalled us; but to make it the occasion of presenting a brief memoir of the life and character of Dr. Henry himself. He is justly entitled to this tribute at our hands. He was not only the most eminent scholar in this State; he was one of the earliest and ablest contributors to this Review. His articles, together with those of Elliott, and Legare, and Nott, gave it, when first established, the exalted position which was then universally conceded to it, as a literary journal. He had promised to become a contributor again, and, at the time of his death, was engaged in preparing an article on a very interesting point in the history of Greek philosophy. In addition to these public considerations, we shall not deny that a private motive has not been without its effect. Dr. Henry was our revered instructor, and to him more than to any other man, living or dead, we are indebted for the direction of our own studies, and for whatsoever culture—"quod sentio quam sit exiguum"—our mind has received. Twenty-six years ago, we entered his lecture-room, a raw, inexperienced, but ardent pupil. He was then in the vigour of his days. We shall never forget the impression which his profound learning, his lofty bearing, and his intense enthusiasm produced on our minds. We saw, what we had never seen before, a *ripe scholar*. The effect was electric; we felt the power of a new life; and from that day to this, amid all the vicissitudes of his and our own history, we have never ceased to regard him with filial love and reverential gratitude.

Dr. Henry was born in the city of Charleston, on the 6th December, 1792. His father, Peter Henry, a native of Banffshire, in Scotland, was the son and only child of a respectable farmer. He manifested an early inclination to the church, and probably received, for that purpose, a liberal education; but, through the

intervention of the Duchess of Gordon, his attention was turned into the channel of business. After the death of his parents, he emigrated from Scotland to the West Indies, where he became a very successful merchant. He was born on the 23d of July, 1752.

Dr. Henry's mother, whose maiden name was Anne Adelaide Schwiers, was the daughter and youngest child of a merchant of great piety and worth in the city of Bremen. Her brother, Rev. Conrad Schwiers, D. D., was minister of the Dutch Reformed Church, Austin Friars, London, and author of a grammar of the Dutch language. He seems to have been a man of learning, and his social position may be inferred from the circumstance that his son married the niece of the Governor of Demarara, and was subsequently appointed regent of the place, with the title of Honourable. Anne Adelaide, the mother of Dr. Henry, was born in Bremen, on the 5th of June, 1757. She removed, at an early age, with some of her relatives to the West Indies; there she married Mr. Angel, of the island of St. Croix. He died in little more than a year after their marriage, leaving her a widow, with an infant son, the late Mr. Justus Angel, of John's Island, near Charleston. In an excursion, which it was supposed would not occupy more than a few hours, she was blown off at sea, and after weeks of hardship and exposure, landed finally at Kingston, Jamaica. There she became acquainted with Mr. Henry, and married him. They resided in Jamaica a few years, then removed to the Bay of Honduras, and at length, settled in Charleston, S. C., in May 1792. Having selected this city as his home, he returned to the West Indies to adjust his business, and to collect the debts which were still due to him there. He had settled his affairs to his satisfaction, and was on his return to Charleston, with a large amount of money, when he was captured by a French privateer, robbed of all that he had collected, and so barbarously treated, that he died of the effects of the cruelty, in Savannah, Georgia, on the 2nd September, 1794. His son Robert was thus consigned to the sole care of his mother; and he could not have been left in wiser or safer hands. With the remnants of her husband's fortune that she was able to put together in Charleston, she opened a dry goods store, from the earnings of which she succeeded in supporting herself and educating her children, without drawing upon the aid or the sympathy of others. She was, in many respects, a remarkable woman. Familiar with the languages of western Europe, conversant with affairs, of sound and vigourous understanding, she was fully competent to direct and superintend the training of her son, and to her, under God, he owes all that he afterwards became. He always cherished her memory with the profoundest veneration. He was accustomed, particularly, to commend her solid sense and her enlightened piety; and her letters show that she happily combined tenderness with firmness in her treatment of her children,

and ardour of zeal with exemption from asperity or bigotry in her relations to God. Amid all the trying vicissitudes of her history, her faith was unshaken and her serenity unbroken.

She was deterred by no narrow consideration of economy from seeking the best masters for her son, assigning as a reason—and it is a proof of her great good sense—that poor teaching, however cheap, is always costly; and good teaching, however costly, is always cheap; that the best, in other words, is always the cheapest. As soon, therefore, as Robert had mastered the alphabet, she put him under the care of Rev. Dr. Buist, who had recently come to Charleston, with a high reputation, from the University of Edinburgh, having been commended to the Scotch or First Presbyterian congregation in the most flattering terms, by Drs. Robertson and Blair. With Dr. Buist he began the Latin, as we have heard from himself, at six years of age. His Ainsworth's School Dictionary has his name written in it, in his mother's hand, under date of August 28th, 1800, so that he had begun to construe and translate, before he had completed his eighth year.

As it had been the purpose of his father to educate him in England, his mother took him there in May, 1803, and put him under the charge of a Mr. Johnston, with whom he appears to have remained only a few months. He was thence transferred to the school of James Lindsay, D. D., Grove Hall, Oldford Bow, near London. With Dr. Lindsay, in addition to the Latin and Greek classics, he studied the French language, as appears from a record made in his copy of Gil Blas, in September, 1804. He continued under the care of Dr. Lindsay until 1808, when, at the solicitation of his mother, he relinquished the prospects of academic life, and took a situation in the counting-house of Mr. Hernandus Vos, a merchant of London, who carried on an extensive trade with the Dutch colonies of Demerara, Berbice, and Surinam. Here it was that the exigencies of his employment forced upon him the acquisition of the Dutch language; and with the help of his uncle's grammar, and the constant use of the language in the business of the house, he acquired such skill in it that he spoke and wrote it with fluency and ease. Here also he must have made his first attainments in the German. His introduction to Mr. Vos was through a merchant of Bremen, for whom he always retained a strong affection, and whose brother subsequently married his only sister. It is certain that, in 1809, he corresponded occasionally with his mother in the German language. It is probable that he remained in the counting-room only about a year, when he resumed his academic studies with reference to preparation for the ministry of the gospel. In 1811 he entered the University of Edinburgh, and graduated Master of Arts, June 15th, 1814. We find among his papers memoranda of his having

attended, in 1813, the classes of Prof. Brunton in Hebrew, Dr. Ritchie in Divinity, Dr. Brown (the celebrated Thomas Brown, the successor of Dugald Stewart) in Moral Philosophy, and Dr. Meiklejohn in Church History. In April, 1814, he completed his course at the Divinity Hall; and we now have before us his examination exercises, which were sermons on John xvii. 15, for Church History, and critical dissertations on Romans v. 6, ix. 2, 3, for the Divinity Hall. We have no memoranda of his studies in 1811 and 1812, except that, in a letter to his mother, dated August, 1812, he complains of the undue importance assigned to the mathematics in Edinburgh. His own tastes led him to languages and philosophy, and he regrets that the time which he was anxious to give to Hebrew and Arabic, he was compelled to share with the exact sciences, in order to maintain a respectable position. We sympathize with him in his troubles, and, though we would not banish the mathematics from our schools and colleges, nor underrate their importance as useful sciences, we cannot withhold the opinion, that, as a discipline of the mind, they are comparatively worthless. We agree cordially with Sir William Hamilton in the estimate which he has put upon them, and, until his arguments shall have been answered, we shall regard the question as settled. Among the manuscripts of Dr. Henry are two articles, addressed to the editor of the Classical Journal, and dated July, 1813, which indicate his interest in the critical study of the Greek. One is an exposition of a passage in the Iliad, and the other an exposition of two passages in the New Testament. Both indicate a sound judgment and ripe scholarship. His interpretation of 1 Cor. xi. 10 is particularly ingenious, and, we are inclined to think, entirely original.

Young Henry left the University with rare accomplishments. He was well skilled in the ancient and modern languages, and thoroughly imbued, under the enthusiastic teachings of Brown, with the love of philosophy. That he made a strong impression upon those who were competent to judge of merit, may be inferred from the following anecdote. While in Edinburgh, probably at the close of his university course, he had the pleasure of meeting Sir William Hamilton, then a young man, with the honours of Oxford blooming fresh upon him, at the house of a friend. Their interview was brief; they parted, and never met again; and yet, more than forty years afterwards, Sir William Hamilton retained as vivid a recollection of the scene as if it had recently occurred. He narrated the circumstance to a young gentleman from the South Carolina College, two years ago, and inquired with affectionate interest into the subsequent history of the young Carolinian.

Having received his degree, Dr. Henry returned to London, and spent some time, how long we cannot say, with his friends there. The war between England and the United States prevent-

ing his return to his own country, he turned his mercantile attainments to a good account, by accepting an agency which yielded him an adequate support without drawing largely upon his time, and which gave him the opportunity of spending the year 1815 upon the continent of Europe. His letters show, that, in selecting the ministry of the gospel as his calling, he had been impressed with the deepest conviction of its importance. He had not chosen it as a trade, but as an awful department of most solemn and responsible labour, in which he might benefit the souls of others and save his own. He unbosomed himself freely to his mother, and often expressed his regret that he had not access to the society of experienced Christians, that he might have a deeper and more practical knowledge of the things of God. It was during this year that he passed through a painful trial of his faith, which his friends apprehended might eventuate in the renunciation of his profession. At some seasons in their history, all earnest minds have been tortured with the agony of doubt. Intense conviction is rooted in the storms of spiritual conflict. He alone believes deeply who has doubted deeply; and he alone can estimate the preciousness of an assured faith, who has experienced the anguish of its birth. This was illustrated in the case of Dr. Henry. Devoted to truth, and incapable of anything like insincerity or deceit, he could not profess what he did not feel to be true. Doubts were excited in his mind in relation to the doctrines of predestination and the Trinity; he was beset with scruples; and, though he had completed the usual routine of theological study, and had been licensed to preach according to the forms of the Scottish Church, yet, when these doubts took possession of his mind, he determined to renounce theology, unless his difficulties should be obviated by a full persuasion of the doctrines of his church. Happily for himself, his perplexity was not of long continuance. His sense of the evil and demerit of sin, and of the necessity of a real and proper satisfaction in order to the pardon of the sinner, soon sealed upon his heart a practical conviction which no difficulties of the speculative understanding should be allowed to set aside. The atonement of Christ he never could forego, and he has often declared to us, that the government of God would, in his judgment, be altogether unworthy of the Divine Being, if He should receive a transgressor into favour without it. He was the first to call our attention to the passage inserted in the first edition of Smith's Theory of the Moral Sentiments, and omitted in the later ones, and referred to it as a proof of the unhappy ascendancy which Hume had acquired over the mind of Smith. How his doubts became resolved upon the doctrine of predestination, we do not know; but we have repeatedly heard him express his cordial agreement with Augustine in his doctrine of grace.

Early in 1816, he returned to Charleston. The first record of

his preaching is "May 19th, Sunday morning, preached in the first Presbyterian Church." In the following June he was invited to supply the French Protestant Church, where he preached alternately in French and English, until he was elected to the College. On the 25th May, 1817, he was ordained, according to Presbyterian forms, by the old Presbytery of Charleston, which not long afterwards became extinct. We have heard it said that the ordination of Mr. Henry was its last official act.

On the 19th March, 1818, he was married to Elizabeth Henrietta Connors, daughter of Charles Connors, Esq., of Clarendon, South Carolina, who was a native of St. Stephen's parish. This amiable and accomplished lady, a pattern of meek and unobtrusive virtue, now survives him, together with six children, the fruits of their union. In December, 1818, he was chosen to the professorship of Moral Philosophy and Logic in the South Carolina College; and as the circumstances of his election were highly creditable to him, and are not generally known, our readers will excuse us for reciting them. His name was suggested by Hon. Mitchell King to Mr. Pringle, the President of the Senate, and, ex officio, a member of the Board. Mr. King also transmitted to Mr. Pringle two essays of Dr. Henry on subjects connected with the department for which he was a candidate. When the board met, Dr. Henry was put in nomination by Mr. Pringle, and his claims earnestly espoused by Judge Cheves. Dr. Maxcy, the president of the college, and a man, deservedly, of commanding influence with the board, had his heart set upon the election of another candidate. Dr. Henry's essays were submitted to the board, and Dr. Maxcy requested the favour of being allowed to take them home and read them at his leisure. His request was complied with, and upon the reassembling of the board, he pronounced a high encomium upon the essays in question, and not only withdrew his opposition, but gave his cordial support to Dr. Henry, who was unanimously elected. It is a pity that such an ordeal were not now exacted of a man's fitness for a professor's chair, before he is called to fill it. In every other profession there is usually demanded a trial of skill before a candidate is entitled to its privileges; and the universities, as anciently constituted, attached great importance to academic disputations. But merit, in these days and in this country, is ascertained upon easier terms; and learning and intellectual ability are not the items which enter most largely into it. We are now content to accept a teacher, if he has capacity to learn, and gives a reasonable promise of being able to keep ahead of his class.

The sphere of labour into which Dr. Henry was now introduced was, in all respects, congenial with the tastes and cherished habits of his life. Philosophy was his favourite pursuit. He loved the classics, and was critically conversant with the choicest monu-

ments of antiquity. But philology with him was only the handmaid of a higher truth; and he never felt himself so perfectly at home, as when conversing with Socrates in the streets, Plato in the gardens of the Academy, Aristotle in the Lyceum, or "the budge doctors of the Stoic fur," in their chosen walks. Man was the theme on which he concentrated the powers of his mind—man in all his relations and in all the aspects of his being. He accordingly entered upon the duties of his chair with ardour and enthusiasm, and the consequence was that new life was infused into a department of inquiry which had, previously, somewhat languished. His residence at Edinburgh, his partialities for the Scottish philosophy, and his fondness for Locke, it might have been presumed, would have led him to underrate the importance of the scholastic logic. This, happily, was not the case. The respective provinces of syllogism and induction were clearly perceived by him, and while he united most cordially in the homage which was generally and justly paid to Bacon, he detracted nothing from the equal merits and the equal glory of Aristotle. He was the first man to give to logic its proper place in the South Carolina College. He was the first of those who undertook to teach it there, that really understood it. He had imbibed none of the prejudices which had so largely infected other disciples of the new organon; and in his zeal for mood and figure, and his earnest evolutions of the importance and significance of forms, which ignorance pronounced barren and indolence dry, one was tempted to think that ancient Oxford had removed to Columbia, or that Marck Duncan was revived in one of his countrymen. Logic, henceforward, became a prominent study in the State; and this circumstance will explain the general tendencies of mind which the statesmen and scholars of the commonwealth have confessedly exhibited.

The only literary labour with which, during the first years of his professorship, Dr. Henry favoured the public, was an eulogy, delivered at the request of the faculty of the college, on Dr. Edward D. Smith, who had been professor of chemistry and mineralogy there, and whose character had won for him golden opinions from his colleagues, the students, and the people at large. His death was universally lamented as a public calamity. The tribute paid to him was worthy alike of the author and the subject. It was delivered December 12th, 1819, but not published until 1822.

The 4th May, 1820, he experienced a severe affliction in the loss of his mother, who died after a painful and lingering illness, which she bore with Christian patience and resignation to the will of God. She had lived to see her labours and anxieties crowned with success, in the circumstances of her children. They had been her jewels; for them she had lived, and toiled, and prayed; and it is a noble incentive to exertion, that her work had not been in

vain. Her eldest son, Mr. Justus Angel, the fruit of her first marriage, was adorning the social position which, of all others, is most esteemed in this State, by the accomplishments of mind which his education in England had given him. Her son Robert was precisely in the station which her own heart would most ardently have coveted for him; and her only daughter, who still survives, was all that she could wish a daughter to be. She looked upon the heritage which God had given her, and could sincerely rejoice that she was able to bequeath a noble legacy to the country and the world. His promise had not failed; He had been a husband to the widow, and a father to the fatherless; and she was permitted to close her eyes with every earthly desire fulfilled, and with the confident hope of a richer joy in heaven. She had attained a good old age, wanting only a month of being exactly sixty-three years old; and we cannot but feel that the prayer of Simeon was appropriate to her case, "Lord, now lettest thou thy servant depart in peace."

The following December, Dr. Henry delivered an eulogy, at the request of the faculty, on Dr. Maxcy, the late president of the college. His appointment to discharge such duties, is a proof of the estimate in which he was held by his colleagues; and the ability with which he performed them sufficiently vindicates their perspicacity and confidence. An eulogy on Maxcy was a very delicate undertaking; it was hardly possible to come up to the measure of public expectation. That extraordinary man, whose memory is still fresh in the hearts of his pupils, and whose influence still lingers in the college, in the general type which he impressed upon its discipline, seems to have been born for the government and direction of the young. Distinguished by dignity of character, elevation of sentiment, and a communicative sympathy, he infused his own spirit, by the gentle inspiration of his matchless eloquence, into the minds of his pupils. He at once awed and attracted. An atmosphere of moral power surrounded him, and none could approach him without feeling its influence, and paying an involuntary homage to virtue. "His presence," says an admiring pupil, in a production which we do not hesitate to signalize as one of the most exquisite gems in the casket of our literature, "quelled every disorder. The most riotous offender shrunk from the reproof of that pale brow and intellectual eye. The reverence that attended him stilled the progress of disaffection; and to him belonged the rare power—exercised in the face of wondering Europe by Lamartine—of quelling by persuasion the spirit of revolt." He justly looked upon the formation of character, by inducing the conscious exercise of principle, as the main end of college government; the measure of its success is the extent to which the subjects of it are led to think, and, by their own determinations, to govern themselves; and the secret of its power is the

charm of eloquence, example, and advice, by which they are led to develope and apply the law contained in the structure of their own souls. To teach men, in other words, to be a law unto themselves, is the scope of wise and judicious discipline. This principle Dr. Maxcy kept steadily in view; he made the college a school of character, and the man within the breast his most effective police. Through all the changes of its history, the college has retained the impression which he gave it; and to this more than to any other cause, is due the lofty sentiment of honour which has always pervaded it. That there are evils which the predominance of this mode of government fails to repress, cannot be denied; and because they are obvious and palpable, some have thought it advisable to substitute a system of military rigour, in which the facility of detection and the certainty of punishment shall be the principal restraints from disorder. The change, we think, would be injurious. There would not be the same culture of principle, the same manly self-reliance, the self-respect and dignity which are the natural result of the maxims of Maxcy; and the loss of these qualities would be dearly purchased by an exemption from a class of disorders which, after all, are rather mischievous than wicked—the offspring of levity and thoughtless frivolity rather than of malice.

The eulogy was published in 1822, and is one of Dr. Henry's most finished productions. In comparing it with the beautiful sketch of Mr. Petigru, we were struck with the difference between a pupil and a colleague in their estimate of Dr. Maxcy's genius, and the predominant tendencies of his mind. One makes him æsthetic, the other metaphysical. Mr. Petigru affirms that he "was deeply imbued with classical learning," while Dr. Henry asserts: "I could never discover that he possessed a keen relish for the classical authors of antiquity; and for philological pursuits, strictly so called, I know that he entertained no very great reverence." Upon all other points, the two accounts are in harmony, and perhaps even here the discrepancy is more in appearance than reality. Dr. Henry paid one other tribute to the memory of Dr. Maxcy—the inscription upon the monument, erected to this illustrious man by the Clariosophic Society, came from his pen. There needs no other record of his accomplished scholarship; and it is an interesting circumstance that the same monument consecrates the memories of the two men who have exerted the greatest influence upon the history and fortunes of the college, and that in the respective aspects of their usefulness. Dr. Maxcy shaped its government, and Dr. Henry its studies; and it is precisely the discipline of the one and the learning of the other that are perpetuated.

After the death of Dr. Maxcy, metaphysics were taught by Dr. Henry as a labour of love, or by a private arrangement with the

Board of Trustees, until 1824, when they were formally transferred to his chair, and logic, belles lettres, and criticism erected into a new and independent department, which was first filled by Henry Junius Nott, Esq., at that time a conspicuous member of the bar.

The publications of Dr. Henry from 1822 to 1832, were purely occasional. They were, 1. Two sermons on the Connection between Faith and Practice, and on the Co-operation of Reason with Grace; these appeared November, 1822. 2. A Thanksgiving Sermon, preached February 5th, 1823, and published at the request of the students. The subject was, Religion productive of National Prosperity. 3. A Discourse on Duelling, occasioned by the deaths of Edward P. Simons and Archy Mason; preached December 7th, 1823, and published at the request of the House of Representatives. 4. A Discourse on the Beneficial Results consequent on the Progress of Liberal Opinions in Politics, delivered in the College Chapel, July 4th, 1824, and published in 1827. 5. Contributions to the Southern Review, from 1828 to 1832, of articles on Niebuhr's Roman History, the Romances of the Baron La Motte Fouque, Goethe's Wilhelm Meister, and Waterhouse's Junius. During this period, however, his labours in the college were prodigious, and his application to study so intense, that the bell for morning prayers not unfrequently found him in his library, unconscious that a night had elapsed, and that he had not closed his eyes in sleep. He prepared, as a part of his appointed duties, in addition to the lectures he had been accustomed to deliver on moral philosophy, a full course on metaphysics, the new branch which had been assigned him. His instructions in political philosophy embraced, in connection with the topics of the text book, a masterly analysis and exposition of the constitution of the United States, which still exists in manuscript, and occasional discussions of the points usually embraced in political economy. He was fresh from Edinburgh, where the work of Smith and the labours of Stewart had given extraordinary popularity to this department of speculation, and he was the first to introduce the subject in collegiate instruction in this country. Beside these, he gave, at irregular hours, the attendance of the students being voluntary, a very complete view of the evidences of Christianity, and interesting sketches of the history of philosophy. His lectures upon these subjects were extempore, and only a few notes, which he used as memoranda, are found among his papers. His vindication of Christianity was not without effect. Many a young man who came in doubt went away convinced. One case deserves to be recorded, though we cannot mention the name of the individual. A youth from another State came to the college, attracted by Dr. Cooper's fame, and his guardian's sympathy with Dr. Cooper's opinions. His mind was full of prejudice against religion. He

was drawn by curiosity to Dr. Henry's apologetic lectures, and the result was that he left college a confirmed believer, and subsequently became a preacher of the gospel. To these disinterested services, must be added his kindness and courtesy, as well as his zeal for the interests of the college, in relieving the aged Professor of Languages of the instruction of the upper classes in Greek. In the midst of this ceaseless toil, he redeemed time for general literature, and if his means had been commensurate with his aims, he would have left a work which would have linked his name in immortal union with the name of a scholar whose genius was only equalled by his learning. Soon after the appearance of Niebuhr's work on Roman history, he determined to translate it into English, if satisfactory arrangements could be made for publishing the translation. He began the work, and had proceeded nearly through the first volume, when he abandoned the enterprise, because no publisher could be found who would assume the risk.

In 1833, Dr. Cooper, who had succeeded Dr. Maxcy, resigned the presidency of the college. His religious opinions had rendered him so offensive to the religious people of the State, that it became clearly impossible for the college to answer the ends of its establishment, if he continued at the head of it. He was a man of eminent abilities, and of extensive and varied attainments. The benevolence of his nature, the frankness of his temper, and the natural simplicity of his manners, joined to his wide spread fame as a man of science, and a sufferer in the cause of liberty, gave, in his person, the fairest opportunity to liberal opinions to illustrate their boasted power of good. The result, according to the popular verdict, was a miserable failure. Public sentiment demanded a change. Religion and education had always been regarded as inseparable allies, and it was no longer to be tolerated that the South Carolina College should present them in the attitude of unnatural hostility. All parties united in doing justice to the integrity and talents of Dr. Cooper; it was not a personal opposition to the man, but to the religious sentiments of which he had become the representative. He yielded to the popular demand, and withdrew from public observation to the quiet walks of literary labour. Dr. Henry was appointed temporarily to fill his place, and during the year (1834) in which he discharged the duties of the presidency, in addition to the labours of his own department, he drew up and delivered a course of lectures on political economy, a branch which Dr. Cooper had taught for some years previously. The friends of Dr. Henry took it for granted that he would be chosen as the permanent successor of Dr. Cooper. To use a phrase of his own, "he was in the line of succession." Dr. Cooper had been elected over him by only a single vote, though at that time Dr. Henry was a very young man, and had been very

recently connected with the college. The board of trustees would, no doubt, have tendered the office to him with the utmost cheerfulness, had it not been that public sentiment involved Dr. Henry in the same condemnation with his illustrious colleague. They had been associated so long and amicably together, that a common odium attached to them both, and it was felt to be unsafe, in the new organization, to give the slightest ground for suspicion as to the religious character which the institution was thenceforth to bear. Not long before the meeting of the board, Dr. Henry published a sermon designed to vindicate his name from the unjust imputations of indifference or skepticism which had been cast upon him. The sermon was entitled, The Mysteries of Religion worthy the Assent of the Human Understanding. But prejudices, which had long been accumulating, were not to be subdued at once. The board took what seemed to be the safe side, and elected another president. They were, unwilling, however, to lose him from the college, and consequently retained him in his professorship, while they sufficiently indicated their own conviction of his piety and merits by granting him the degree of doctor of divinity. Indignant at what he felt to be the injustice that was done him, he withdrew from the college to a small farm which he owned in the neighbourhood of Columbia, where he lived in great retirement for nearly two years, with the exception of two visits to the west, made for the purpose of seeking better lands.

There never was a more unfounded charge than that Dr. Henry sympathized with the opinions of Dr. Cooper. On every important point of morals, philosophy, and religion, they were the poles apart. Dr. Cooper was an avowed materialist; Dr. Henry's tendencies were all to idealism. Dr. Cooper looked upon utility as the criterion of right; Dr. Henry looked upon right as the criterion of utility. Moral rules, according to Dr. Cooper, were flexible and variable; according to Dr. Henry, eternal and immutable. Dr. Cooper was first a Socinian, and afterwards a Deist, in religion; Dr. Henry a thoroughgoing advocate of the Nicene creed, and of an external, authoritative standard of faith. Dr. Cooper was mortally opposed to an order of clergy; Dr. Henry regarded it as indispensable to the public good. We speak what we know. There was but one subject on which they thoroughly agreed, and that was politics. They were both the ardent friends of liberty, and the zealous advocates of the liberal opinions which political economy had demonstrated to be the true interest of States. But, unfortunately for himself, Dr. Henry had never proclaimed his opposition to the doctrines of his friend. They lived on such good terms as gentlemen and as officers of the college, that the people could not understand the spirit of toleration which enabled them to walk together without being agreed. From our own experience and observation, while a student in the

college, we are satisfied that the influence of Dr. Henry, within the legitimate sphere of his duties, was efficiently exerted in counteracting the tendencies of Dr. Cooper's doctrines. He never let slip an opportunity of vindicating religion, and the records of the Christian faith. We ourselves are particularly indebted to him for the able and satisfactory reply which he gave to us in private, to Dr. Cooper's celebrated assault on the Pentateuch.

Dr. Henry passed his life in comparative obscurity until December, 1839, when he was induced, by the urgent solicitations of his friends, to accept the invitation of the board, and return to the college as Professor of Metaphysics, Logic, and Belles Lettres. None of his old associates were there. Cooper, and Nott, and Park, and Wallace, were dead. He came among strangers, except that the distinguished chaplain of the college was an old pupil. But his learning commanded respect, and in 1841, when President Barnwell was compelled to retire from the institution, on account of his health, Dr. Henry was chosen by his colleagues chairman of the faculty, and held that trust until December, 1842, when he was unanimously elected president of the college. It was during these years that he changed his ecclesiastical relations. He had always been an advocate of the doctrine that regular succession from the apostolic period was a mark of the true church. This may have been the key to his episcopacy. Be that, however, as it may, he was ordained a deacon of the Protestant Episcopal Church, by the Right Reverend Bishop Gadsden, on the 10th March, 1841, and a presbyter or priest by the same bishop, on the 25th September, 1842.

Soon after his return to the college, the extraordinary compliment was paid to him, of being elected by the two societies to deliver their annual oration. It is the only case, we believe, in which a professor has been chosen to this office. The address was delivered on the 8th of December, 1840, and published at the request of the societies. The subject was, The Cultivation of the Fine Arts favourable to the Perfection of Private Character and the Development of Public Prosperity. In December, 1845, his relations to the college, for reasons which it would be altogether indelicate to discuss, either in the way of censure or approval, were changed. From that time till the period of his death, he gave instructions in Greek, without being required to participate in the government and discipline of the institution. He was released from an intolerable burden of care and anxiety, and his days, no doubt, protracted by the comparative quiet which he was permitted to enjoy. His academic labours were occasionally diversified by other occupations. He preached two sermons, one on the Greatness of God, November 24th, 1847, the other on the Goodness of God, June 30th, 1848, at the Pinckney Lecture, in

Charleston, which were published according to the provisions of the foundation.

In 1848 or 1849, he was proposed, by some of his friends, for the episcopate of Mississippi. When consulted on the subject, he replied that it was an office which should neither be sought nor shunned; that, if he were elected, he should consider it a call of Providence to a more extended sphere of usefulness; if not, he had learned that man's happiness consisted in entire conformity to the will of God. He was, therefore, neither chagrined nor disappointed when the result of the election was announced to him.

An address on eloquence, delivered before the Clariosophic Society of the College, at the dedication of their new hall, February 10th, 1849, the eulogy on Mr. Calhoun, and a letter on co-operation, which appeared in the South Carolinian, February 10th, 1851, complete the list of his publications.

For several years before his death, his friends had noticed, with apprehension and anxiety, that his strength was failing; his step had lost its elasticity, and his gait its freedom; he himself was persuaded that he was approaching his end; but it came, after all, unexpectedly. He was congratulating himself, only a few days before his last illness, that his health was firmer, and his physical feelings more natural than they had been for years. In a long excursion which we made with him, and in which we discussed some of the principal doctrines of modern philosophy, he alluded to his reviving energies, and expressed the hope that his previous feebleness had been a penalty, which, at length, was satisfied, for his early habits of imprudent study. Alas! all was delusive! On Monday, the 3rd of February, he took to his bed; on Wednesday, the 5th, he lay a corpse. His malady seized him while engaged in prayer. He had retired to his library, and, according to his custom, was invoking the blessing of God upon his studies, when he received an intimation that his studies were over. As the last act of his health was prayer, his friends may cherish the hope, that the first act of his ransomed spirit was praise. He was sixty-three years and two months old, the day he died. His first connection with the college was for sixteen years precisely; his second, for sixteen years and a little more than a month; so that he had been upwards of thirty-two years engaged in the office of instruction.

Dr. Henry, in person, was of middle stature, with a well proportioned and compactly built frame, and an air of commanding dignity. His head was large, and his brain well developed; his features were regular and handsome; his countenance noble and frank, and his whole face beamed with intelligence. He bore in his aspect the marks of his pedigree. His expansive forehead, his clear complexion, and his light hair proclaimed a German origin, while the dogged resolution which was compressed in his lips and

reflected from his eye betrayed the blood of the Cameronian and Covenanter. He inherited from both races the peculiarities of his mind, the fervid genius of the Scot and the patient industry of the German, united in a common zeal for the pursuits of philology and philosophy. His natural temper was irascible, but self-government was the study of his life. In his domestic relations he was a model of tenderness and affection. The most conspicuous feature of his character was his scrupulous regard to truth. He abhorred every appearance of prevarication and deceit, and no one could look upon his face without being impressed with his manly and noble ingenuousness. He could conceive of no circumstance under which a lie was admissible. The conventional evasion by which a visitor is turned from the door, under the plea of "not at home," he contemplated only with disgust. It is obviously an artifice of cowardice, to purchase an exemption from a disagreeable intrusion, without the risk or responsibility of offence. As to the pretext that it deceives no one, it may be confidently said that, if it does not deceive, it perplexes. The man is left in doubt; he knows not whether you are really from home, or only wish to be undisturbed by his company, and the effect is, that he must act upon the supposition of your absence, whether you were absent or not. He must *presume* the statement to be literally true, whatever reasons he may have for suspecting it to be false. The very design of the equivocation is to create this presumption, in order to avoid the imputation of rudeness. In morals, says Jeremy Taylor, our first thoughts are generally our best; and we suspect that no one ever employed this expedient for the first time without a violent shock to his moral sensibilities, and a forfeiture of something of his own self-respect.

We cannot conclude this memoir without adverting briefly to Dr. Henry's philosophical opinions. He had been, as we have seen, a pupil of Dr. Brown, and always retained an exalted estimate of Brown's metaphysical abilities. The general system of his master he cordially adopted. Reid's doctrine of an immediate perception of external objects he rejected, not by virtue of the principle that the relation of knowledge implies an analogy of existence, but because he was persuaded that the only facts given in consciousness were the successive changes in the states of our own being. The uniformity of these changes we were compelled to attribute to some permanent cause, but except as the unknown cause of known phenomena—an explanation which our constitution constrained us to receive as the only consistent explanation of a series of regular effects—he contended that we knew nothing of the existence or properties of matter. He was thus what Sir William Hamilton calls a cosmothetic idealist, or hypothetic realist. What Sir William Hamilton calls "the fact of consciousness in perception," he positively denied. The only difference betwixt these

views and those of Berkley, was the admission of a mysterious something as the cause of intellectual phenomena, independent of mind. The affinity betwixt the systems is obvious at a glance, and, next to Dr. Brown, the philosopher whom Dr. Henry most prized was the Bishop of Cloyne. We have often heard him say, that if he were compelled to adopt one side of the alternative, he would find it far easier to maintain the non-existence of matter than the non-existence of mind. Thought we know directly and immediately, while matter is known to us only in its relations to thought. In his academic teachings, he was accustomed to begin with Locke, as being the point of departure of most of the modern schools. He took the aspect of Locke's theory, though fully sensible of its imperfect development in the hands of its master, which led to idealism, and he was saved from the consequences which Berkley fairly deduced, only by an appeal to a primitive belief, which guaranteed a transcendent reality beyond the sphere of consciousness. The authority of our primary beliefs he accordingly concurred with the whole Scottish school in receiving, but he was not partial to the phraseology by which Reid expressed them, nor satisfied with the reduction he had made of them. Though an accomplished German scholar, and well versed in German literature, he had no taste for the German philosophers. His estimate of Kant was precisely that of Dugald Stewart, and as to Kant's successors, we do not believe that Dr. Henry could ever be induced to read a line of their writings.

In morals, though he excogitated a system of his own, and developed it with great ingenuity, the leading hints were suggested by his favourite authors, Berkley and Brown. Assuming as a postulate, that society was the natural state of man, and the well-being of society the end of law, he deduced his moral rules from the a priori consideration of its nature, and the conditions indispensable to its conservatism and security. They were, consequently, the products of the understanding, and not the dictates of an original and special faculty. In the development of his scheme, he subjected social relations to an analysis from which he inferred the necessity of three great laws, into which, he supposed, all our moral duties might be finally resolved—truth, justice, benevolence. Conscience he regarded as belonging exclusively to the emotional part of our nature, and as having no other office than to operate as a sanction in reference to the rules which the understanding had elicited. It was in no sense a law; it was simply a motive to enforce the law. Hence, he contended, that to speak of an enlightened conscience was absurd; the light was not in it, but in the understanding; it was nothing but the feeling of approbation or disapprobation, consequent upon the contemplation of our conduct as in conformity or otherwise with the rule whose authority we acknowledged. The feeling of approbation, prospectively

considered, was a sense of obligation; retrospectively considered, conviction of merit or ill desert—self-approbation or remorse. Moral truth, being the product of the understanding, from the contemplation of fixed and permanent relations, was itself immutable. The truth was *necessary*, if society were given, and no man could depart from it, upon any considerations whatever, without making himself an outlaw. Our duties to God he resolved, in the same way, into the personal relation we sustain to him. There was a species of society betwixt us. Communion was the highest form of religion, and communion was society intensified.

Such is a brief outline of the doctrine to which the students of the South Carolina College were inured for more than twenty years.

The death of Dr. Henry we regard as a great calamity to the college, not so much because it is deprived of his teachings, as deprived of his presence. The spectacle of a man of erudition is itself a stimulus to exertion. It operates powerfully on the young. They see what industry and application can accomplish, and have an example of successful effort. Besides this, they are led to perceive in what genuine scholarship consists. The distinction is kept before them between learning and pedantry—real merit and factitious pretension. Dr. Henry was on all hands confessed to be a man of extraordinary attainments. He walked the campus among able and learned professors, and all conspired to do him reverence; and, as he unfolded his stores before his pupils, the dullest were, for a moment, inspired with a gleam of literary ardour. We sincerely trust that his mantle may fall on worthy shoulders. It will take an Elisha to supply the place of Elijah.

CRITICAL NOTICES.

Foote's Sketches of Virginia. Second Series. 1855.—We hail with unfeigned pleasure the appearance of the second series of Foote's Sketches of Virginia, and we imagine, while we sympathize in, the delight with which these sketches of their beautiful scenery, and of their ancestors and churches, will be read in the Valley of Virginia and Little Tennessee, the Vaudois and Waldenses of the Alleghanies. Mr. Foote modestly and appropriately calls the records Sketches, such as an artist puts in his field-book—outlines of picturesque objects that strike him, which may be worked up at leisure and combined as fancy prompts. Mr. Foote's highly attractive contributions are, in truth, memoires pour servir a l'histoire, and provide materials to fill up an important gap in the historic literature of Virginia; for, while her earlier annals were brilliantly set forth by her own Froissart chronicler, the chivalrous and romantic Captain John Smith, they have been continued through many a volume of various talent and merit. Stith, however, comprises in his history of Virginia but the short period of twenty years, and is, besides, out of print. Beverley is puerile and contemptible. Keith's history, on the contrary, is agreeable and even elegant; while Burk's, of higher pretension, is vigourously conceived, and presented in a manly and agreeable style; left unfinished by the death of the author, so that his work brings the narrative down only to the earlier stages of the revolution, from which it is continued, in a paltry and meagre way, by one L. H. Geradin, whose style of writing and tone of thought show him to be a foreigner in language and sentiment. But the whole work which goes under the name of Burk, is occupied mainly, almost exclusively, with the external and political affairs of Virginia; while Mr. Hawkes' History of the Episcopal Church is, as its title indicates, exclusive of the grand and touching topics handled by Mr. Foote. Thus he has opened to him a fresh, unreaped field, white for the harvest, entirely unattempted until now in history; for even Mr. Charles Campbell's work, published as late as 1847, dismisses the whole subject of the glorious establishment and propagation of the gospel in Western Virginia, (aye in Eastern, too,) in the single short sentence, in page 124, "Presbyterianism steadily increased in Virginia, under the auspices of Davies and his successors, particularly Graham, Smith, Waddell, and Brown; and, at the revolutionary era, it had become an important element in the social organization of the colony." Of these men, thus cursorily and casually

mentioned, and of their works, it has been the pleasing occupation of Mr. Foote to afford a more extended memorial. To depict the social system as modified and illustrated by these men, is to write the most brilliant episode of Virginia's epic. Of this it may be truly said, that it is well and carefully done. It brings down the history to the present generation.

It is very obvious, from the zest and unction apparent in Mr. Foote's book, that he executes his assumed task con amore; that to him it was a labour of love; that, as Scott says of Robert Patterson (Old Mortality), he has been impelled by a "deep and enthusiastic feeling of duty," and a pious veneration for his church and his brethren in the ministry. His temper and character, as well as his habits and pursuits, are very much those of Old Mortality; and he manifestly regards the pioneer Presbyterians of the valley with a pious veneration not unlike that which Patterson gave to the Covenanters, or that which the people of the Northern States gave to the Pilgrim fathers. The Presbyterian fathers and their flocks, whose settlement and progress Mr. Foote describes, were a stout, resolute, pious, and devoted set of men. Impelled by an apostolic spirit of missions, they penetrated unexplored regions, dark with primeval shade, scaled lofty mountains, preached within hearing of the war-whoop of the Indian, went to meeting with the rifle in one hand and the Bible in the other (see p. 121), encountered all the dangers of savage warfare, and submitted to all the discomforts of frontier life, with serenity and even with joy, so that, working under their great Taskmaster's eye, he might see their work well and faithfully done. These pious pioneers were not fleeing from any actual persecution, or seeking a new residence in any spirit of resentment or revenge for injuries at home. Their temper had not been exacerbated by oppression, nor their principles driven to exaggeration by bitter conflicts with the civil authority, nor exasperated by sectarian collision; for with the Presbyterians went out into the wilderness a party of Quakers, and also men of other evangelical denominations. No bitter animosities were fermenting in their bosoms; their minds were not heated and narrowed by polemical collision; they went forth in the meek and firm spirit of the ancient apostles, prepared to suffer or to do whatever Providence might assign to them; not uplifted by spiritual pride, or prepared to assert a domination over others which they had rejected from themselves. They were grave, not stern; sedate, not sour; confident, not arrogant; pervading, not aggressive. In short, they were Presbyterians, not Puritans. While with some tinge of the Puritan in their character, they had nothing

of its harshness or acrimony. They burnt no witches or schismatics; they exiled no Episcopalian or Baptist; although Mr. Foote does record that some slight sentiment with regard to witches was manifested in the case of Mary Greenlee, which may perhaps be excused to the spirit of the times, and not specially attributed to the Presbyterians, inasmuch as, about the same time, there was a witch burnt in lower Virginia, in Princess Anne county, amongst Episcopalians. (See Burk's Hist. of Virginia, appendix to vol. ii., xxxi.)

With characteristic naivete, Mr. Foote begins his sketches by saying, "And now, kind reader, you shall be introduced, if you please, to some of those early settlements made by men of strong minds, ready hands, and brave hearts, the elements of whose character, like the country they chose, had been developed in the prosperity of Virginia." Let us go with him a short space into the scenes to which he so blandly marshals us the way.

The first object presented to our notice by Mr. Foote is Opequon. "Come," he says, "let us sit down here, in the shadow of the church and the school-house, which always went hand in hand with the Scotch-Irish emigrants, and these old trees, the witnesses of the past and the present, and let us gather up some of the memorials of the events and generations passing in a century of years." "That is Opequon meeting-house, and between it and the village (of Winchester) is the graveyard in which lie the remains of some of the oldest settlers of the valley." Now, this picturesque sketch is an instance of how susceptible to moral and picturesque influences is an enthusiastic nature, over the ordinary prevalence of temperament and habitual gravity. The thoughts and language are poetical, and vivid, and ardent; and if they had struck him so, he would probably have sobered them into a more sedate colouring. Opequon was the earliest establishment in the valley of Virginia, and one of the most lovely spots in it. This was the point, the terminus a quo, from which started that evangelical mission that spread its benign influence through the surrounding valleys, across the high summit of the Alleghanies, down upon the declivity of the western waters, and downwards with them into Kentucky and Tennessee. Well may the Presbyterian, or the devout man of any denomination, look with reverent emotion at this salient point of a noble career, at this fountain spring of a mighty and fructifying river. No one would look unmoved upon the lonely little lake where the Mississippi begins its first trickling streamlet, or could refrain from letting his fancy trace its course down to its grandeur and expanse. From this neighbour-

hood of Winchester, the blessed gospel was spread and diffused around. Upon the invitation of the large grantees, Hite, Beverley, and Burden began to flock thither, and to lay the foundations of ths most considerable families, and all of the churches of the mountain region of Virginia. "The first Presbyterian minister that visited this region," says Mr. Foote, "was Mr. Gelson, of whom the records of Donegal presbytery, in 1736, say, 'Mr. Gelson is appointed to visit some new inhabitants near Opequon, in Virginia.' Wherever the good seed fell, it took root, grew, and spread." "By the time of Braddock's defeat," continues Mr. Foote (p. 20), "the congregation assembling at this place for worship was large, and composed of families of great moral worth, whose descendants have been thought worthy of many posts of honour, trust, and profit in the gift of their fellow citizens." The following pages of Mr. Foote establish the truth of this statement. These numerous and respectable descendants have reason to be grateful for the assiduity and fulness with which he has traced their descent. His main purpose, however, is to trace the lineage of the church, which he traces from the Donegal presbytery to Opequon, under Mr. Hoge, a most honourable name to the present day in Virginia; and thence onward to Mr. Montgomery and to Mr. Le Grand, a distinguished preacher, of whom an extended sketch is given. "Under him," says Mr. Foote, "Opequon saw her best days; and while he officiated there, reports from the west came, of Kentucky, more beautiful in its solitariness than Opequon had been in the eyes of the emigrants from Ireland;" and the grandchildren, like their ancestors, sought a new home among the prairies beyond the mountains. Not a moiety of the congregation remained with their pastor, and thus was the first Presbyterian colony sent into Kentucky. They went with all their steady habits, active spirit of religion, firm purpose, and patient daring, making Kentucky a portion of the earth, peopling it with the Browns, the Howards, the Breckenridges, and with whatever eminent names have since signalized the State. Nor was the remnant left behind less prolific or less eminent. They filled all West Augusta with churches, that were seen, according to Mr. Foote's graphic account, rising amongst the uncleared forest, in close vicinity to the Indian wigwam. First appeared the substantial log meeting-house, erected with the timber which had been felled to clear a place for its site; next a strong, plain stone church. Nothing can be more picturesque than Mr. Foote's account of the successive erection of these churches. The description of the old stone church (p. 27), is exquisite. Most of the churches derive their names

from some local circumstance of their neighbourhood, indicative of the character of the country. Thus the Triple Forks of Shenandoah, Timber Ridge in Rockbridge county, the Tinkling Spring in Augusta, the Ebbing Spring, the Glade Spring, and the Sinking Spring, in Washington. The very names have a sylvan savour, and have a smack of their rustic origin, and to the present day their successors have had the good taste to preserve them. These were the wild and remote localities in which the early Presbyterians reared their primitive temples to the living God. But what shall we say of the pastors who ministered in them, the hardy, devoted, God-fearing, and self-denying apostles, who laboured all the week with their hands, and preached all Sunday in their pulpits; who feared not the face of man, for they were dauntless, nor the vicissitudes of life, for they trusted in God. Like the Rev. Charles Cummings, of Sinking Spring Church, as recorded by Mr. Foote (p. 133), who went with his congregation into the meeting, pastor and people fully armed; when ascending the pulpit, the reverend man placed his rifle in the corner of it, and, hanging up his shot pouch, began the solemn worship of God.

But we must remember that we are not writing a history, but merely making a notice of a most interesting and attractive work. It lures us on in spite of ourselves, to an extent incompatible with our allotted space. Let us, however, indulge ourselves in a hasty glance at one or two of the most prominent characters and events in Mr. Foote's narrative. Most prominent, and towering above all, was that wonderful man, Samuel Davies, who was, as Mr. Foote says, the father of Hanover presbytery, which was the mother of all the presbyteries of the South and West; but by no means adds, the founder of Presbyterianism in Virginia. In the judgment of Patrick Henry, no very incompetent judge in such matters, Mr. Davies is indeed supposed by many to have been the model of Mr. Henry, and to have kindled the flame of eloquence in his bosom; and there is but little difference in the traditionary reputation of their speaking. The father and founder of the church, however, was Francis McImie. There is also an incidental glance at Jonathan Edwards, clarum et venerabile. These are really historical names; and following these, Mr. Foote arrays a succession of most worthy and respectable men, accompanied with biographical notices: Craig, the first pastor of the Stone Church of Augusta, and also pastor of Tinkling Spring, Patello, Brown, McDowell, Cummings, Mitchell, Houston, Draper, etc., on to Hill of Winchester, the steadfast advocate of the new school, Alexander, Rice, Graham, founder of

Washington College, Baxter, its president, Blain, professor of mathematics, and many others, minora sidera, but still shining lights in their sphere With memoranda of these eminent and holy men, Mr. Foote interweaves most amusing accounts of the times and events with which they were variously implicated. For example, with the ministry of Mr. Charles Cummings, he naturally and tastefully introduces the battle of King's Mountain, commanded and fought by the members of Mr. Cummings' congregation—Scotch-Irish Presbyterians enterprising and achieving the most complete victory of the revolution. So, too, he brings in the battle of Point Pleasant, where Andrew Lewis, a Scotch-Irish Presbyterian, commanded in the hardest battle recorded in the annals of Indian warfare. He also narrates many thrilling instances of the capture of men and women by the Indians, on the Presbyterian frontier, and their redemption thence—the Mores, the Drapers, the Inglises, and others. In all these anecdotical and legendary details, he keeps the church steadily in view, and never deviates so far from his base line of Presbyterianism as to lose sight of it. We would fain ramble on with him, but again we are admonished of the necessity of pausing, for we are not aware that the gods accorded their assent to the modest prayer of the lovers, who desired that time and space might be annihilated. Taking leave of this most agreeable and instructive sketcher, we cannot but hope that we may meet with him again, if not here, in that better region to which his pious life and labours seem to assure his entrance.

Celebration of the Battle of King's Mountain, October, 1855; *and the Address of the Hon. John S. Preston; together with the Proceedings of the Meetings, and Accompanying Documents.* Yorkville, S. C.: Published for the Committees by Miller & Melton. 1855.—The above is the title-page of a most interesting pamphlet of 108 pages, which has been extensively circulated and read. Unlike many of the fugitive speeches which are daily issued from the press, and, when read, are speedily forgotten, the speech in this collection is useful, both as a historical record, and from the fact that it contains many passages of real beauty, calculated to excite a generous glow of patriotism in the reader, and to increase his veneration for the heroes of the King's Mountain, whose prowess and valour did much to secure our country's independence.

To the ten thousand people who had assembled to participate in

the celebration, the occasion was one of peculiar interest. Besides the associations which would cluster around the great battlefield, there was much in the natural graces of the orator to excite admiration. Bearing a name of uncommon prestige, he had a magnificent person and voice, which would command the respect of any crowd. But, greater than all, he brought a mind attuned in sentiment to his lofty theme. The speaker, too, had everything to inspire him. In early youth he had associated with many of the heroes of the battlefield, and caught from them their patriotic ardour; and now, before a vast multitude of admiring countrymen, he stood up to repeat the first lessons of his boyhood, and to pay honour to those heroes who had so nobly fought for their country. He stood, too, on the ground dedicated to freedom, "and soaked with the blood of martyr-kinsmen."

The orator availed himself of all the happy circumstances of the occasion, and by the charms of his eloquence carried his audience before him; and so vividly did he pourtray the incidents of the battle, that one could almost imagine himself in the conflict; he could hear the curses of the bloody Ferguson, see the desperate struggle of the combatants, and hear the shouts of victory; and almost exult in the bloody tragedy which was enacted after the battle.

The speech, in places, seems rather artistic to a reader removed from the exciting circumstances of the occasion, but throwing himself in the midst of the audience, and catching their enthusiasm, he will appreciate those parts which appear scenic and formal. The feeling which animated the mass is well described in the opening of the address:

"Why come up here youth and manhood—age and woman—the hope—the struggle—the triumph—the joy of life?

"My Countrymen! Not success, nor triumph, nor power—not the decrepitude of age, nor the vigour of youth—not all the necessities of actual life can make us forget the places where liberty was born. We come up to these places to worship, for they are sacred."

The gathering of those hunting-shirt men on the Wautauga, beyond "the unknown mountains," is beautiful and poetic; in fact, the whole recital of the conflict has a vivacity which is really charming. The death of Williams on the battlefield, and the subsequent death of Campbell, will start the tear of compassion. The following tribute to the heroes of the battle, when accompanied with the majestic voice and gestures of the orator, was warmly applauded:

"My countrymen, I look around me here on this scene, and need I, dare I ask, is there one here, is there one living soul, who hears the

mighty tones of liberty resounding over the earth, who will refuse to kneel down and worship the Great Spirit which moved these men to come down and fight this battle? Oh, no, our free, glad hearts crown them with eternal glory, and shout the loud pæan—hail, hail, hail, sacred fathers of human liberty!"

We will trouble the reader with another extract, for, besides being a beautiful tribute to American liberty, it, at the same time, administers a reproof to those who, following, as we believe, a narrow and restrictive policy, would lay an embargo on the human affections, and say that the sons of freedom should not give a brotherly grasp to the oppressed of less favoured lands, who seek our shores, and yearn to breathe the atmosphere of a free country:

"And it is this estate of ours, thus derived, which constitutes the American epoch under which we are living; which cuts off our days from all the 'old ages,' and is the first distinct, unmistakeable, ineffaceable mark of the almost divine fact of human liberty, on the institutions of man. In them, in the purity and might of its power, in its tremendous purposes, it had no recognized being, no real place, no hallowed name, before that baptism of blood we have met to celebrate. It is not of the Hebrew, the Greek, or the Roman; it is not feudal, or papal, or Lutheran; it is the gift of God to America; it is American! Oh, do not blaspheme that name with the foolish, the wicked, the petty purposes of a day. The name of American denotes our breeding from heroes and sages, who were inspired of heaven to work out our great deliverance. Do not desecrate it by a vain use or mischievous application. It is wide enough for the worshippers of liberty over the whole earth—it is not wide enough for hypocrisy and vain deceit."

The conclusion of the speech, although having a vague generality common to speeches, is so happily rounded off, and reminds one so much of the pretty conclusion of the poet to the schoolboy, at the end of Marmion, or, more still, like the rich and sonorous conclusion of Bryant's "Thanatopsis," that we cannot forbear giving it:

"We are the sons of heroes and sages. Let us be true to ourselves, be true to our country, be true to the God who gave it to us, be faithful to the blood shed here by our sires, and we will be the sires of freemen as long as the earth owns man for its master.

"Such, at least, is the faith and hope of the Christian and patriot, as he kneels on this holy place."

We have thus given some glimpses at the beauties of the speech, enough, we hope, to induce those who have not read it, to do so. The orator has undoubtedly, at times, paid too much attention to polishing his periods, forgetting that "music charms the sense, but eloquence the soul," but upon the whole it is a speech of uncommon merit.

After Mr. Preston's oration, the celebrated historian, Mr. Bancroft,

was called out, and delivered a few remarks. It is thus described on the thirty-third page of the pamphlet:

"It was such an address as might have been expected of the man—ornate and eloquent, yet touching in its simplicity; modest, yet bold and truthful—every sentiment beautifully adapted to the occasion, coming from the heart of a patriot, and clothed in the chaste language of the accomplished scholar."

The most beautiful incident of the celebration remains to be told: there was one there who, in days gone by, could have done more nobly even than the distinguished speakers who had addressed the audience—for his magic oratory has seldom been surpassed; but he no longer possessed his former power; a score of years had made a change; his heart was warm, but his form was bent; his eyes had lost their lustre, and his tongue its mellifluous strains; age and disease had chilled his hand; and his harp, which, in times gone by, sent forth æolian notes, responsive to his touch, was almost mute; but still, under the excitement of the occasion, he gave a gleam of his former genius.

We will conclude our hasty sketch of the celebration by giving an extract of the report of Mr. Melton, the editor of the Yorkville Enquirer:

"The following sentiment was then proposed:

"Honourable William Campbell Preston: Rekindled in the grandson, has been transmitted to us the spirit which gleamed in the sword of the grandsire. While we have assembled to honour the patriotic deeds of the one upon the battlefield, let us not forget the statesmanship and eloquence which have thrown a halo of imperishable glory around the other. In the fulness of age, as in the pride and strength of manhood, South Carolina delights to do him reverence.

"When the loud applause with which this sentiment was received had subsided, the once proud and majestic form of 'the inspired declaimer,' now bent with age and tremblingly leaning upon the crutch for support, approached to the front of the stand. For a moment, the fire of genius, almost gone out, which had once commanded 'the applause of list'ning senates,' seemed to enkindle, and burn as brightly as ever. He said:

"'If anything could now relume the embers of a life which, at times in my youth and manhood, has perhaps burned brightly, it would be the sentiment which has just been uttered. It touches the objects which are dearest to me. It points to a life which has been animated by what I thought and hoped to be elevated objects of ambition, and to an ancestry whose memory had been most fondly cherished. Here, in these scenes of primeval grandeur, and upon a spot with which it has been the fortunes of that ancestry to be associated, it comes upon me with especial force; but if I could ever speak, I can speak no longer, and if excuse be needed, I would appeal to this,' (raising up his crutch) 'and to this,' (laying his hand upon locks as white as snow;) 'yet, still my heart,' (laying his hand upon his breast,)—but the utterance failed, and 'the old man eloquent' bowed his head and wept, while the tear, trickling from every eye in that vast assembly, told the story of earnest sympathy, and paid a tribute to the power of true eloquence—the eloquence of feeling, of action, and of silence."

The American Journal of Education; Published bi-monthly. Edited by HENRY BARNARD, LL.D. Vol. I., No. 3. March, 1856. Hartford, Conn. —If journals have been successfully maintained in the departments of law, medicine, theology, and politics, in which the manifold topics of each may be fully discussed, we see not why the great subject of education may not afford equal scope for such a journal as the above. Teaching is as truly a science, and must be ranked as high as any among the honourable professions. The number of persons employed in the business of instruction, from the primary school to the university, constitutes certainly a very large faculty; and in this graduated scale, the higher degrees at least must call for as large attainments, and for as much practical wisdom, as are needed in any other walk of life.

Indeed, one has only to glance at the contents of this number of the American Journal, to see how boundless and inexhaustible is the range of subjects brought within review. The history of education, as it has been conducted in ancient and modern times; the different methods pursued in different countries of the civilized world, with their comparative results; the vast range of studies prosecuted, ever widening with the expansion of science and art; the various schools of philosophy which have obtained, with the tendencies of each; the reduction to practical use of the most abstract and general principles in philosophy and science; the various popular institutions in which, by lectures, libraries, &c., to diffuse knowledge among the masses; all these, and other suggestive topics, may easily fill successive numbers of an education journal in the hands of one so competent as Dr. Barnard, aided by so large and efficient a corps of contributors as that announced upon the cover of this periodical.

Especially is such an organ as this needed in a country like our own. A vast array of teachers, spread thinly over a huge continent, have not the opportunity of correspondence and intercourse enjoyed in the more compact countries of Europe, both in England and Scotland, and on the Continent; so that, without the aid of the press, there can be little interchange of views so important to every learned faculty. Besides, the institutions, which at an earlier day were transferred from the old world, must undergo manifest and various modifications to adapt them to the circumstances and wants of our own people. The necessity, too, of popular education, growing out of the popular form of our government, and the difficult problems to be solved in framing a scheme of education for the masses, suited to the different parts of this extensive republic, render the whole subject one of general as well as

of professional interest; claiming the attention of the statesman and philanthropist, no less than of the teacher. We augur, therefore, great and good results from the establishment of such a journal as this, devoted to the interests of American education, and sincerely hope that it may receive a patronage which will ensure its continuance; and that the leading minds of the country engaged in the work of education, may be stimulated to make this the repository of their matured opinions and rich experience.

The three most elaborate articles in the present number are, The Progress of Educational Development in Europe, by Henry P. Tappan, D.D., LL.D., chancellor of the university in Michigan; The Improvements practicable in American Colleges, by F. A. P. Barnard, LL.D., professor in the university of Mississippi; and, The Method of Teaching Greek and Latin, by Tayler Lewis, LL.D., of Union College, in all which we had marked passages we desired to extract, but must forbear presenting.

In the first, Dr. Tappan specifies "three stages of learned and artistic association" in Europe; the primal or ancient, the middle or ecclesiastic and scholastic, and the modern, presenting under each the characteristics by which they are distinguished, with learning and with great freshness and vigour of thought. In the second article, Dr. Barnard points out the many defects in the instruction and discipline of our colleges, and offers suggestions that are worthy of the most serious consideration, opening a very wide field of criticism and reform. In the third article, Dr. Lewis exposes the grievous and vicious method of teaching the classics by a merely verbal rendering from one language into another, without regard to the idiom and genius of either language; and his criticisms will command the warmest sympathy of every reader. All the lighter articles of this number are full of instruction and interest, some of them embodying a large amount of statistical information.

The work is edited and published bi-monthly, at Hartford, Conn., by Henry Barnard, LL.D., at $3 per annum.